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# REVIEW THE SUSTAINABILITY OF FOREST RESOURCES

## HEARING

BEFORE THE

SUBCOMMITTEE ON
CONSERVATION AND FORESTRY

OF THE

COMMITTEE ON AGRICULTURE,
NUTRITION, AND FORESTRY
UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

FIRST SESSION

ON

SUSTAINABILITY OF OUR FOREST RESOURCES

JUNE 21, 1989

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# REVIEW THE SUSTAINABILITY OF FOREST RESOURCES

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WEDNESDAY, JUNE 21, 1989

U.S. SENATE,
SUBCOMMITTEE ON CONSERVATION AND FORESTRY OF THE
COMMITTEE ON AGRICULTURE, NUTRITION, AND FORESTRY,
*Washington, DC.*

The subcommittee met, pursuant to notice, at 1:30 p.m., in room SR-332, Russell Senate Office Building, Hon. Wyche Fowler, Jr. (chairman of the subcommittee) presiding.

Present or submitting a statement: Senators Fowler, Conrad, Baucus, and Gorton.

## STATEMENT OF HON. WYCHE FOWLER, JR., A U.S. SENATOR FROM GEORGIA

Senator FOWLER. Ladies and gentlemen, welcome. This is the Subcommittee on Conservation and Forestry; my name is Wyche Fowler, and I will be joined by some of my colleagues shortly, but we have a large agenda and I am thankful for the participation of so many, so I do want to get started.

We are here today to look at the sustainability of our forest resources, in every dimension, on our public and our private lands. We have made some progress over the last couple of decades in recognizing the wide range of benefits we derive from our Nation's forest lands. We need to look at rates of seeding and harvesting, and consumption, so we can plan to meet future needs for timber production. But I believe we have to go even further in seeing that our forests are managed as more than simply tree farms, to make certain that we sustain our other priceless forest resources, as well.

I know we would all agree that in this age of urban sprawl, it is hard to underestimate the value of our forests' scenery, the recreational and sporting opportunities, as well as the fish and wildlife habitat they provide. We cannot show too much concern about problems of environmental degradation that reflect on our forest management practices: including declines in biological diversity accompanied by reduced diversity of replanting, habitat fragmentation and restricted migration of species, and weakened watershed protection.

Sooner or later we are going to have to recognize that we are very poor at improving on, or even recreating the processes and conditions of nature that have been at work for thousands of years to produce these varied ecosystems. To some degree, we are going to have to let our forest lands regenerate themselves. In some cases, we are going to take an active role in reversing the oversimplification of forests we have set in motion and in remedying even greater ecological harms we have already committed.

Our Nation has a strong economic interest in adjusting our management course for comprehensive sustainability of resources. Damage to our salmon fisheries in the West is a case in point. Intensive logging has crippled some critical spawning areas in California's Shasta-Trinity National Forest, and in the Siuslaw and Siskiyou National Forests of Oregon—with great harm to the region's sport and commercial fisheries and with little economic return for those timber sales.

But the issue that we are examining today, in this first in a series, certainly goes beyond economics—to our responsibilities as stewards of our natural heritage. In the forests of the Southeast we see the native black bears headed for trouble as they have been restricted to 10 percent of their original range and populations have been isolated from each other. It will be a moral travesty if we do not prevent the demise of such important species.

This is especially true when the pressures that threaten survival in our natural world are caused by some very questionable human activities and interventions. We have to meet the demand for timber and other forest products. However, this does not justify severe environmental damage on behalf of below-cost timber sales from national forests, and questionable zealous roadbuilding programs in pristine and fragile terrain.

Another fact we must consider in our oversight duties, it seems to me, is that our national forests do not exist in a vacuum. They are not meant to provide, nor can they provide, the sole protection for our watersheds and purification of our air, or the totality of our wildlife habitat. They cannot supply all of our backwoods sporting and recreational needs. They cannot be the sole refuge of endangered species. Some of these needs could be met, and I hope will be met, by private forest lands.

In some cases, this means we need better management of private lands for these uses. I can tell you, as just only one Member of the Senate, that in my capacity on this committee, that I am going to look very skeptically at allowing timber companies that have overharvested and mismanaged their own lands—whether from pure corporate incompetence, or to pay off huge debts accumulated in leveraged buyouts—to harvest on our public lands. We are supposed to be here for the public purpose, to oversee our forests, not to sustain greed and shortsightedness.

Since I have gone that far—farther than I should, I am sure—let me add that we are not going to tolerate any of the bureaucratic tampering with our oversight responsibilities that we have seen in the past—a responsibility that goes along with all the legislating and regulation that we do—as when the Forest Service counted forests already cut or scheduled for cutting in inventories of this country's remaining old growth. We are here to sustain our forest resources, not to pose and play-act and pretend we are doing the job. One of the canons of sustaining our resources is that we cannot permit the obliteration of any one element of our forest ecosystem, whether it is old growth, redwood, or longleaf pine forest.

To do so would mean economic death for the industries that depend, directly or indirectly, on those resources. So, in that sense, the spotted owl may save a few loggers in future generations.

In conclusion, we must reach a sustainable balance in our use, preservation and regeneration of our forest resources. Because, as all here know, diminishing our natural heritage—and fracturing integrated and interdependent ecosystems—runs counter to all of our most important economic interests, our most vital environmental needs, and the most basic responsibilities of our stewardship.

This will be the first of several hearings to begin an overview of both our private and public practices. I thank all of you who have agreed to testify this afternoon.

The prepared statement of Senators Conrad and Gorton will be entered, at this point, into the hearing record.

[The prepared statements of Senators Conrad and Gorton follow:]

## PREPARED STATEMENT OF HON. KENT CONRAD, A U.S. SENATOR FROM NORTH DAKOTA

Mr. Chairman, I appreciate the opportunity to speak at this important hearing. I am looking forward to working with you on the care of our forest resources. I appreciate the chairman's leadership in this area.

While North Dakota is not considered a forestry State, trees are an important resource, particularly as shelterbelts. Right now, we need to replace 66,000 miles of dead shelterbelts that have been destroyed by drought, disease, and herbicide drift. This totals more than 10 million tons of wastewood that must be removed before planting can begin. Our State has taken on this challenge for our centennial and plans to plant 100 million trees over the next 10 years.

Mr. Chairman, perhaps one of the biggest obstacles to my State's restoration project is disposal of this wastewood. Researchers in my State and around the Nation are looking at alternative products for wastewood as well as alternative energy and chemical production from this neglected resource. Private consulting firms and the U.S. Forest Service are already developing practical means of collecting and processing timber waste. Some of these methods may prove practical in North Dakota shelterbelt restoration project.

I would like to see Congress encourage and support these research and development efforts. The Forest Service currently spends a large portion of their budget to burn wastewood. We have heard testimony today that our Nation fails to utilize the wood that is available. Wastewood is simply a wasted resource, and I look forward to working with you on this problem. Thank you, Mr. Chairman.

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## PREPARED STATEMENT OF HON. SLADE GORTON, A U.S. SENATOR FROM WASHINGTON

Mr. Chairman, I am pleased that the Senate Agriculture Subcommittee on Conservation and Forestry has scheduled this hearing to discuss the sustainability of our forest resources. This is an issue of serious importance to the Pacific Northwest region of the National Forest System, and very important to Washington State. The wise stewardship of our natural resources, and maintaining resource sustainability is a goal I believe that all of us must strive for.

As many of you know, the Pacific Northwest region is presently involved in an intense conflict over the use of our public lands, and to what extent these forests provide jobs for our citizens. Part of our conflict I would suggest is due in part to forest management practices of years past. Sustainability of our forest resources, unfortunately, in relation to the age class of our forests, is a relatively new management goal. As a result, public perception on the use of forest resources for timber production has generally not been favorable. I am deeply concerned that too many people, in the Pacific Northwest and nationwide are not yet convinced that our forest resources are being properly managed. Too few understand the reforestation management activity that takes place, and the extensive planning undertaken to manage our public resources.

I am anxious to learn more about the sustained management activity related to forest resources through today's hearing.

Senator **Fowler**. We are going to begin with the Chief of the Forest Service, Mr. Dale Robertson, and I am very grateful for his participation. Then, after we have Mr. Robertson, we move according to the program, and all I can ask in advance, and I will ask again when you testify, is, to the greatest extent, to summarize your testimony, so that we can have a chance to have a little give and take.

Chief, welcome, and thank you so very much for being here today, and I will let you proceed as you will.

## STATEMENT OF F. DALE ROBERTSON, CHIEF, FOREST SERVICE, U.S. DEPARTMENT OF AGRICULTURE, WASHINGTON, DC; ACCOMPANIED BY GEORGE LEONARD, ASSOCIATE CHIEF, FOREST SERVICE

Mr. **Robertson**. Thank you, Mr. Chairman.

I also have with me George Leonard, the Associate Chief of the Forest Service.

Senator **Fowler**. I know Mr. Leonard.

Welcome, Mr. Leonard.

Mr. **Leonard**. Thank you, Senator.

Mr. **Robertson**. Mr. Chairman, we welcome these oversight hearings on forestry, and I want to pledge the support of the Forest Service and myself, working with you and the committee, as you schedule this series of hearings on forestry.

I think it is important that we have these oversight hearings, because we are dealing with some really tough issues in forestry, and we want to work with you, however we can, to provide the best information, and to make these hearings most useful to the Congress.

Senator **Fowler**. Thank you.

Mr. **Robertson**. I think this series of hearings is especially timely, because we are in the midst of our long-range planning process, under the Forest and Rangeland Renewable Resources Planning Act, which this committee was very instrumental in getting passed in 1974.

What I would like to do is enter my rather lengthy prepared statement in the record, and just highlight a few points that seem important to me.

Senator **Fowler**. OK.

### RPA REQUIREMENTS OF THE FOREST SERVICE

Mr. **Robertson**. Under the Renewable Resources Planning Act (RPA), the Forest Service is required, every 10 years, to make a long-term assessment of the renewable resource situation in the United States, and that is a look at the resources on all lands, private land as well as publicly owned lands.

I have a stack of documents that includes the 1989 assessment. We have an assessment of the overall situation for timber, recreation, fish and wildlife, range, water, minerals, and other resources involving the forests.

This has been out in draft form, we have had comments back on it, and in fact, the final document is at the printer's now.

So, I think as we deal with the oversight hearings this coming year, this will be a very valuable document. It is a factual analysis of the situation.

Senator FOWLER. Good.

### 1989 RPA ASSESSMENT

Mr. ROBERTSON. I will highlight the assessment findings on a few of these items, and I will start with timber.

### TIMBER

In spite of the fact that the United States has some of the most productive forest lands in the world, and we have one of the most efficient forest industries in the world, the United States in a net importer of wood products. In fact, we get about 30 percent of our softwood lumber from Canada, and the trade deficit is running between $5 billion and $6 billion a year on forest products.

Based on our assessment, demand is going to go up in the future, and we are projecting that over the next 50 years, softwood will go up about 34 percent, and hardwoods about 80 percent. So, when you add those two together, we are looking at about a 50-percent increase in the demand for wood over the next 50 years.

When you start looking at where this wood might come from, you pretty soon come to the conclusion that we are going to have to depend on the forests of the United States. Right now, we depend a lot on Canada, but there is a lot of uncertainty in Canada, especially about the question of how much more they can expand to meet the growing needs of the United States.

In fact, there is a lot of information that seems to imply that Canada is about at their peak production, so we are really, I believe, going to have to look at our forests in this Nation to meet our long-term, growing needs.

That is the nice thing about forestry in this country—we have a lot of capability that is not now being utilized, and that is especially true on the small, nonindustrial private ownerships. The management of these lands is well below their potential.

There are 8 million landowners who own about 61 percent of the forest land in this country, and overall they are growing timber at about 50 percent of the land's potential.

It has always been a dilemma in dealing with these landowners because there are so many of them, and how to get them to practice more intensive management on their most productive forest lands.

I think there are some people on the panel who will discuss this later, but one conclusion we have reached after a lot of studies is that technical assistance to private landowners is essential, and without technical assistance, the possibility of good forest practices is not very good.

Senator FOWLER. If you will allow me to interrupt you, since just us chickens are here right now, does the Service have any specific proposals on what technical assistance should be provided, or any plan to provide it?

Mr. ROBERTSON. Yes, we do this in cooperation, and really in teamwork with the State foresters. We have a State and private forestry program, but the delivery system—the people really out talking with the landowners—are State foresters and State employees. We provide some financial and technical assistance to the State foresters.

Our budget is around $70 million to $80 million in our State and private forestry program.

Senator **Fowler**. Has that increased in this year's budget?

Mr. **Robertson**. Well, no, it has been stable for the last several years. In fact, that has been one of the areas of contention between the Congress and the administration, and it is over the budget for our State and private forestry program.

Senator **Fowler**. I see.

Mr. **Robertson**. And Congress has historically restored the budget to a stable level.

The national forests have about 50 percent of the standing softwood sawtimber in this country, and we do have an age gap problem, particularly in the Pacific Northwest. The South and the Northwest are the two major timber producing regions.

There are a lot of young trees growing in the Pacific Northwest, but it is going to be another 20 years or so before they are commercially available for sawtimber. The national forests have about 51 percent of the Nation's standing softwood timber and over the next 20 or 30 years we are going to depend on trees growing today.

### STANDING SOFTWOOD SAWTIMBER ON THE NATIONAL FORESTS HAS TO PLAY A CRUCIAL ROLE IN MEETING THE NEEDS

We don't have time to plant a tree and have it grow into sawtimber size over the next 20 to 30 years. So, this huge volume of standing softwood sawtimber on the national forests has to play a crucial role in meeting the needs over the next 20 to 30 years.

If you look at the growth of timber in this Nation, nationally, we look pretty good. In fact, we are growing about 37 percent more wood than we are harvesting, nationally.

### REGIONAL GROWTH OF TIMBER

But, when you start looking at that regionally, you get a different picture. For example, in your home region, the South, the growth and removal of pine sawtimber is at about a break-even point, or it is about equal. But there is a lot of potential to increase growth in the South, particularly, as I have mentioned, on the nonindustrial private ownerships.

I have already talked about the Pacific coast. Again, in Oregon, Washington, California, we have an age-class distribution problem—very productive land, but the bulk of the standing timber is on the national forests—standing softwood sawtimber.

In the North, the Lake States, and the Northeast, we are growing about twice as much timber as is being harvested. The Lake States are coming on very strong, with a good inventory of timber, and there is a great expansion of forest products industry in the Lake States.

In the Northeast, we have a growing volume of hardwood timber that has not been utilized, and I think it remains to be seen how the situation will develop in the Northeast.

### SUMMARY ON TIMBER

So if I can just summarize on timber, we have tremendous potential to increase growth of timber in this Nation, having some of the most productive forest lands in the world. We need better management of the nonindustrial, private forest ownerships, and half of the existing, standing softwood sawtimber in this country in the national forests.

### CONTROVERSY OVER THE MANAGEMENT AND THE HARVESTING OF EXISTING TIMBER ON THE NATIONAL FORESTS

As you mentioned in your opening statement, there is a lot of controversy over the management and the harvesting of existing timber on the national forests, dealing with how these forests ought to be managed, and what kind of a balance we ought to have. And that is some of the controversy that we are dealing with every day.

### RECREATION AND WILDLIFE AND FISHERIES AND WILDLIFE

I would like to talk about recreation and wildlife and fisheries and wildlife. These are very, very important uses of the forests, and especially on the national forests.

Recreation use is projected to increase, yet the availability of private land for recreation use is declining. In fact, in the last 10 years, we have seen the percentage of private land available free to the public for recreation use decline from 29 percent to 21 percent.

As recreation use is increasing, the availability of private land for recreation is declining, and that, of course, puts more pressure on the public lands to meet the needs for recreation, and hunting and fishing.

The other thing that we have concluded in our assessment is that recreation use is changing. Recreation use is exploding, really, around the urban areas—close-in forests. We are finding people are taking more 1- and 2-day trips, to nearby forests, and fewer long trips to the back country.

For example, the percentage of recreation visits of 1 day or less has increased from 30 percent to 80 percent, over the last 10 years. In the national forests, we are trying to adjust to this changing pattern of recreation use.

Finally, I will just say a few things about water and watershed management. I think one of the most important uses of the forests of this Nation is to——

Senator FOWLER. Well, I think it might be helpful, since you have done such a good job in dividing this into timber and recreation, we can go forward to the water, and come back to the timber.

Mr. ROBERTSON. Sure.

Senator FOWLER. Well, let me ask you, just to pick up on that point, Chief, because we all know what you said is absolutely true, on more demand for use as recreation, and especially as we see our many private lands diminish, what are you doing, or how do you handle the fact that you have, in certain areas of the country, extraordinary demand for the forests, for recreational use and in other parts of the country, and in other parts of the forest system, very little use—has that caused a change in how you train your people, and what you do in those areas?

Are you trying to implement different policies in different parts of the country? Tell me about that.

### WE ARE PREPARING A FOREST PLAN FOR EVERY NATIONAL FOREST

Mr. ROBERTSON. Yes, we are. We are preparing a forest plan for every national forest, and that forest plan reflects not only the capability of that particular forest—what the strengths of it are, whatever the resources are—but also the demands placed on that forest.

You will not find, I don't believe, any two national forests managed exactly alike, because our management is tailored to those locally developed, land management plans that involve a lot of public participation and involvement in helping us determine how those forests ought to be managed.

I think in your home State, the Chattahoochee National Forest, we have worked with the people of Georgia, and I think we have a very good plan that reflects not only the capability of the Chattahoochee National Forest, but reflects the views and needs and desires of the local people there.

We feel that is a strength of the Forest Service. One thing about forestry, it needs to be localized. I am very weary of setting nationwide policy that just applies across the board like a cookie-cutter. Because of the diversity of the forests, the diversity of the people, and the diversity of the needs, you have to adapt to the local situation, within rather broad guidelines.

Senator FOWLER. Do you find that in your experience, and that perhaps of Mr. Leonard also, are our country's forestry schools preparing these graduate foresters for these new demographics, these new population trends, where we see forests like the Chattahoochee and others that are next to an extraordinary growth area, and overwhelmed in their resources?

Do foresters coming out of school have any appreciation, or have any training different from what they had 20 years ago, when this wasn't a problem?

Mr. ROBERTSON. Oh, I think so. There has been quite an evolution in the training of foresters in this country in the universities, and the Forest Service no longer depends on foresters entirely.

We have gone to an interdisciplinary organization, and, for example, we are the largest employer of landscape architects in the United States. We also have a big cadre of fisheries biologists and wildlife biologists.

So we have mixed things up to be more interdisciplinary, and foresters, I think, are getting a broader-gauged education now.

Senator FOWLER. Good.

Mr. LEONARD. I think it's safe to say, though, that the challenges that the natural resource specialists are facing are not nearly as much the technical challenges of their particular discipline as the people challenges—the ability to work with people, the ability to go out and meet with a wide variety of publics who have different expectations and different desires.

The forestry schools are recognizing—the forestry and other professional schools are recognizing this, but we have a long way to go. I think the science and art of public involvement has a way to go to bring people out of school who fully are able to sit down with very diverse people and bring them to consensus on management.

The area of negotiations and conflict resolution is an area that I think, certainly in forestry, but probably as a nation as a whole, we need to be concentrating a lot of effort on.

Senator FOWLER. Thank you. On to water.

Mr. ROBERTSON. I am just going to make one final comment.

### WORK HARD TO MAKE FORESTRY EFFECTIVE IN A DEMOCRACY

We really have to work hard to make forestry effective in a democracy. And the niche in our culture and our democratic form of governing this country really has to work in forestry too.

Senator FOWLER. Well, I appreciate that. And it is only historic criticism. That is not to be—we will get into a lot this afternoon I hope, and that is what this hearing is for. But, of course, one of the criticisms, and I will not pick a time and place, but long before your time, maybe Mr. Leonard's time is that there has been the criticism that the forest, and by the Forest Service has been viewed as just a timberland as an economic activity for timber alone.

And to make what you just said Chief of reality, and I had a few things or so to say about that, about how you manage the resource as something more than a simple economic unit, to take, to provide, to continue the stewardship of the biological diversity of the wildlife habitat, direct demands for recreation, does take more than some training has provided. It is not easy to do.

If you have that recognition firmly in mind, I know you hear criticism, but also get some support from this side, that we have an opportunity to do a much better job.

### RECOGNITION

Mr. ROBERTSON. Absolutely. But I think things are changing. I think the Forest Service is being recognized by groups outside the Forest Service for the kind of job we're doing in resource areas other than timber.

For example, Trout Unlimited gave us the Conservationist of the Year Award last year. Monday night, the Forest Service received the National Service Award from the Recreation Vehicle Industry Association. Last night, I received the Coleman Great Outdoors Award from all the recreation groups in the community.

Three weeks ago, the Forest Service received an award from the American Sports Fisheries Association as the best organization in the United States in fisheries, and we are getting recognition, I think, for this job that we are trying to do on the national forests.

But we are still in the timber business, and we will always be in the timber business. But we are also in these other businesses too.

Senator FOWLER. You want to go and just briefly finish up on water, and then I do want to ask you a few questions about timber.

## WATERSHED MANAGEMENT

Mr. ROBERTSON. Well, I was just going to say the forests are many things when it really gets right down to it. Watershed management has to be one of the most important uses of the forest, and water quality is getting to be more important. And I think we just need to pay a lot more attention to the management of the forests of this country and the conditions of the watershed. And that was the only point I wanted to make.

So I will, having entered my prepared statement in the record, be here to answer your questions.

[The prepared statement of Mr. Robertson appears at the conclusion of the hearing.]

Senator FOWLER. I appreciate that very much.

Chief, let us talk about the timber sales for a minute. I have some questions that we have prepared, and I had better check just to make sure I get my figures. I have a tendency to do these off the top of my head.

Let's talk for a moment about the below-cost timber sales because I do not have to tell you it is a matter of continuing controversy.

From the staff's study of, I guess, your latest documents. You have this new timber sale cost accounting system.

Mr. ROBERTSON. Yes, sir.

Senator FOWLER. And according to your report logging on virtually every national forest in the Appalachian Mountains lost money during 1987 and 1988. Is that right?

Mr. ROBERTSON. I think so, yes, sir, in general that is right.

Senator FOWLER. Why is that? What is the justification for continuing the cutting if we just continue to lose money?

Mr. ROBERTSON. Well, there is more to a forest than just the economics and the dollars, and there is more to a timber sale than just looking at the cash-flow of dollars on an individual timber sale or forest basis.

Now, I do not want to leave the impression that I like below-cost timber sales. I do not like them either. I wish every timber sale on the national forests was positive. But we believe that you need to manage the vegetation on the national forests. And I think the South is a good example.

We bought most of those national forests in the South back in the thirties. They were burned over, cut over forests that were in very bad shape. Most of those forests in the South have a history of 30 years or more of below-cost timber sales, because we have been trying to take out the poor quality trees and get a good forest established.

Now, in most cases, particularly in the pine areas, we brought those forests back. They are money makers, and we do not have to worry about below-cost sales. But, in the Appalachian Mountains, we are not yet to that point. There are expensive road construction costs, and we have some industries and communities depending on that wood supply. So that is the reason we are doing it, to manage the forest and to produce timber for these dependent mills and communities.

Now, I am not going to say, and I would not say that what we are doing now ought to be continued forever. We may need to be making some adjustments on these below-cost forests. But I do not feel right just to let communities go off the cliff, or jobs go by the wayside. I think there need to be some adjustments over time when we find ourselves in situations where Forest Service timber sales are in a permanent below-cost situation.

Senator **Fowler**. I understand, and I have heard it, of course, and probably supported it in other industries, this argument that the job creation or the job maintenance argument.

But it is true, certainly as you look at—if you just take the Appalachia region for one, I will not try to apply it nationwide for a minute. But it is true that in this case the Government continues to lose money to maintain those jobs, much less create jobs, is that not correct?

Mr. **Robertson**. Yes, at the present time, in some cases.

Senator **Fowler**. The report, again looking at your report, it is in the programs in the 8 of the 15 forests listed for region 8, lost money during fiscal year 1987 and fiscal year 1988.

Nationwide, according to your report, timber programs on 65 of the 122 national forests lost money in fiscal year 1988.

Now, I know that that may account for only like 15 or 16 percent, I think you said, of the total harvest. But it accounts for the majority of all national forest timber programs.

Mr. **Robertson**. Yes, sir, your figures are right.

Senator **Fowler**. And it gets back to my side of the table in this deficit climate how we can continue to justify to our public, our people, large appropriations for logging on national forest land that continue to lose money.

You agree that is a difficult public policy question?

Mr. **Robertson**. Absolutely, and if I were in your shoes, I would be questioning that, and I am questioning it myself.

Senator **Fowler**. So even just to show you try to hedge a little bit on your side, I can assure you I know the law does not require you to make money on every sale. But the other side does not compel you to lose money either.

Going back to my original point, did I understand that you expect the forest—tell me about what I think I heard you say on this 20- to 30-year plan that you described on the standing softwood timber.

Do you expect the forests in the Appalachians just to say there will be making money in the future, and that the losses that are occurring now will be made up in the next 20 or 30 years? Do you agree with that, or on what do you base your——

Mr. **Robertson**. Future projections.

Mr. **Leonard**. Mr. Chairman, the forest plans for those forests, most of those forest plans indicate that, over the long term, those forests have a positive return to the taxpayer from managing them for timber.

One of the things that needs to be understood is that there are no other ownerships in this country, no other significant ownerships in this country that are being managed for quality hardwood timber. We do not have quality hardwood timber on those forests today because of their history. They were cut over, burned over, slashed, and they have come back to whatever nature put there.

Those forests have the potential of producing quality hardwood timber, and if this country is going to have any significant supply of quality hardwood timber over the long run, it is going to be on the Appalachian forests and some of the forests through Missouri and Ohio and that area.

Now, there are some small private landowners who, because they are not cutting the trees, are going to end up with some quality hardwoods. But to have any significant ownership, and this is a relatively small portion of our forest resources, but if we are going to have any significant supply of quality hardwoods for furniture and veneer applications, it is going to be grown on those forests.

And all the evidence is that as the demand for hardwoods grows, as our assessment indicates, the value of those forests is going to increase significantly. And so it is our judgment today——

Senator FOWLER. Because of the hardwoods?

Mr. LEONARD. For the hardwoods, right. And that's what those Appalachian forests are, hardwood forests.

And so it is our judgment as we looked at the individual forest plans that the programs that we have laid out——

Senator FOWLER. Let us look at one forest which you hear a lot about. But I asked my staff, again in the context of your accounting system results for fiscal year 1988, the George Washington National Forest in Virginia, according to Report No. 1, the TSPIRS, the timber program on the George Washington lost $1.3 million in fiscal year 1988.

According to Report 3, the economic account, the return on that investment, after 150 years, is only $264,000.

Now, I am not an economist——

Mr. ROBERTSON. But I take it you do not want to invest your money in the George Washington, right? [Laughter.]

Senator FOWLER. That looks like a losing proposition to me.

And, of course, your report also shows—I know this is not the first time you have heard about it, but we just need to openly discuss it, that, you know, a road lasts what, 10 or 12 years. You have been amortizing those roads.

Your report says that the road construction costs, if they were not amortized over 193 years, the George Washington Timber Program actually lost $2.5 million in fiscal 1988, nearly double the $1.3 million listed in Report No. 1.

Mr. LEONARD. Mr. Chairman, a forest road is in fact a permanent investment. It has to be maintained over time and our accounting system includes the cost of road maintenance.

Senator FOWLER. Why would you amortize a road 193 years?

Mr. LEONARD. We are amortizing the road over the volumes of the existing timber stands that are going to be harvested, that can be hauled over that road.

Many of the stands in those forests are being managed for very long rotations, and that volume will come over those roads. And under a standard accounting practice, it is a perfectly legitimate way of accounting.

The system we have was developed in close coordination with the General Accounting Office. And they have testified over on the

House side that it represents the use of standard accounting practices. We are having that accounting system reviewed independently by an outside accounting firm.

**Senator Fowler.** Well, I am going to be very interested, as all of us would be.

And again I am very familiar with the reputation of economists going back to Lyndon Johnson where he said, you know, "Lord, if they would only be a one-armed economist because they all say on the one hand, but on the other hand."

**Mr. Leonard.** That is one of the reasons why we did not have economists design this system. We went to accountants.

**Senator Fowler.** Well, let me just make sure that these figures are in all of our heads because I just want that. I want your independent auditor to look at the George Washington National Forest. We have others but again it shows that if the road construction costs are not amortized over 193 years, the George Washington program actually lost $2.5 million in fiscal 1988, which is almost double the $1.3 million in your Report No. 1.

So, on my terms, public policy terms, the Forest Service estimates that the taxpayers are going to spend $2.5 million today for return of $264,000 in that investment over the next 150 years.

**Mr. Leonard.** But, Mr. Chairman, if you know—I do not—it would be very hard to convince the individual citizen that we are maximizing net public benefits into those figures.

**Senator Fowler.** I would agree with that. But I would point out that if you were a businessman and attempted to write off your roads as a current cost, you would be in serious trouble with the Internal Revenue Service. They and general accounting principles recognize that the capital costs, capital investments that add value to the land, it is totally inappropriate to write them off as a current cost. And, as you know, there can be an argument over the amortization period, obviously, but it is certainly not appropriate to write them off as a current cost.

Let me ask you this. With regard to those roadbuilding moneys, has the Service used all of its money that you have for roadbuilding in the last couple of years?

**Mr. Robertson.** Yes.

**Senator Fowler.** You have.

**Mr. Robertson.** Fifteen or 20 percent a year just because the higher price——

**Senator Fowler.** Fifteen or 20 percent a year what?

**Mr. Robertson.** In our budget for fish and wildlife. Because of the increasing priority that we are placing on that, and it is not only us, it is the Congress and the interest of the public in this.

**Mr. Leonard.** One of the things we did several years ago is sit down with the American Fishery Society and the Wildlife Management Institute and define what are some of the needs for enhancing the wildlife and fisheries program. And we developed a plan in both of those areas. And the moneys are going for implementation of those plans, for such things as increasing the number of fishery biologists and wildlife biologists that we have on our staff so that as we carry out activities on the national forests, we are sure that we have expert help in order to design activities, whether they are timber sales, road construction, or specific habitat improvement needs.

And we are making substantial progress toward significantly increasing staffing in those areas.

Senator FOWLER. I'm a fly fisherman, Mr. Leonard, and subscribe to the Fly Fisherman magazine.

Did you happen to see this article last month entitled "Forest Plans Threaten Western Fisheries," by a fellow by the name of John Holt?

Mr. LEONARD. No, I have not seen it.

Senator FOWLER. I wish you would take a look at that and anything else I am giving you. It is, of course, very critical of what will happen with sedimentation given, they project 50 years down the road, which is impossible to do, I realize in projecting 340,000 miles of road on national forests in plans of 400,000 miles or something like that. I have forgotten the exact figures.

But one of the interesting criticisms in the article that does need to be responded to is that the author criticizes, believes that most of the sediment problems are not being addressed by the best management practices. And it quotes several biologists who are concerned about the loss of the fish habitat in the national forest—this one I think in Montana, and elsewhere, and basically saying that the BMP is just not doing the job.

It is not fair to ask you to respond when you have not read the article, but I wish you would take a look at it.

Mr. LEONARD. We will take a look at it.

Senator FOWLER. Good.

Mr. LEONARD. An awful lot of our attention on those forests with erosive soils and whatnot is devoted to concern about effects on water quality, and particularly about the effect on fisheries.

As a matter of fact, one of the most limiting factors, in many of our forest plans in terms of commodity production, are measures and standards that we have established for water quality and sedimentation.

Senator FOWLER. The distinguished Senator from Montana, Mr. Baucus who we will recognize as joining us. Welcome, Max.

Senator BAUCUS. Thank you.

Senator FOWLER. While you are getting ready to go, I will ask one or two other questions.

Senator BAUCUS. The question is if I get organized here.

Senator FOWLER. While you are getting organized.

Senator BAUCUS. OK.

Senator FOWLER. Well, I appreciate that, and I know that from previous discussions there is a lot of faith and hope in the best management plans. But again I think that goes back to what the Chief said. In certain areas, they seem to be, from my experience, very effective in doing the job in many areas. In other areas, we have some problems.

Mr. LEONARD. The whole concept of best management practices is that you continue to monitor your water quality and sedimentation, and the best management practices in giving you the results you want, then you modify those best management practices to get there.

And so it is an iterative process, and hopefully we will continue to improve as we learn more and more about the effectiveness of the practices we are using.

Mr. **Robertson**. Mr. Chairman, I would like to just say that if a roadbuilding or timber harvesting or any other kind of development process, in our opinion, is going to permanently damage the fisheries resource, we will not do it. That is our philosophy.

Senator **Fowler**. Well, I want to see you live up to that philosophy.

Mr. **Robertson**. OK.

Senator **Fowler**. I will try to help you in any way that I can.

Let me conclude because I know Senator Baucus' time is limited.

I guess I ought to say, to protect my own interests, in light of these questions here, of course, you know we are all serious because this is a real problem. I have, as you know, in Georgia, a tremendous number of constituents who benefit from the sale of timber off of Federal lands. And we have three, four or five at least on the committee. And obviously I am concerned about their welfare. I am concerned and will continue to ensure that their interests are fairly represented. All of us have that charge.

But we have constituents and people all over the country, as you know, in Georgia and Montana and everywhere else, that just do not understand why the largest economy in the free world has to continue to lose money in order to create jobs and harm the environment in the process.

And separate from all 10,000 reports and all this sort of stuff, that just does not make sense. And we have to find a way to do a better job. We have to find a way. It is inexcusable, not only to have unnecessary environmental destruction but to, in a $3½ trillion economy to say that we have to continue to lose money in order somehow to sustain the economic growth of these United States as well as individual States.

It just does not make sense to anybody whose direct interest is not involved. And as public policy, both on the executive side and the legislative side, we have to find a better way to skin this cat so that we can hold our heads high and earn all those awards. Not that you did not earn them, but I got a lot of awards too that I show my constituents every year, and yet my vote total keeps going down, down, down. [Laughter.]

So we can hold our heads high as stewards of these resources.

Mr. **Leonard**. Mr. Chairman, sometimes I think we focus on the employment in the timber industry and in the dependent communities, and it is important that we focus on that in the short run, and that we do not take abrupt actions that disrupt those dependent communities.

But, in the long run, we do not sell national forest timber to create jobs in the timber industry. We sell national forest timber to produce the wood products that the American people need for housing and a multitude of other reasons. And unless there is a demand for that wood, unless there is the market opportunities for that wood to get into the market and help meet those wood product demands, then we should not be in the business of selling the national forest timber. We do not sell it simply for the local employment although, in terms of what we do in the short run, we need to consider those local employment impacts.

Senator Fowler. Well, you covered it pretty well on both sides. But I understand. I just want us to keep the bigger picture. Because as we review—timber policy aside—no, you cannot put it aside. But as we are forced under these deficits to review every Federal agency and Federal program, if we can convince the leadership of the Forest Service, who we are working with, how impossible it is to justify appropriations in many cases for worthy programs where there is unanimous agreement that these programs should be continued, they are in the national interest, you can imagine what it is like to try to justify appropriations for programs that lose money.

And though I appreciate the fact that we have had times where the job creation argument has been made, and you did not do that this morning. Because the answer to that is obvious in some areas. I know Senator Baucus has some very difficult areas in timber in small towns in Montana.

But we have to find a way again in this rich country to return money on Federal investments as well as the great charge that we have with areas that we did not even explore today on the overall value of forests for our ecology, and the problems with global warming, the destruction of forests worldwide. All of that has to come into it.

But I appreciate what I hear you saying. You understand where the public is on this, and now we have to do a better job in working with the public and the private interests to make that case.

Mr. Robertson. Yes. I hope you did not hear us saying that we are locked into what we are doing forever. I think any organization or program—and the Forest Service is no exception—needs to adapt and make adjustments over time. And hopefully we are smart enough to make those adjustments in a way that makes sense.

Senator Fowler. Thank you, Chief,

Senator Baucus. Thank you, Mr. Chairman.

Chief, apart from the financial appropriation side, that is, apart from the below-cost issue, to what degree is the Multiple Use Sustained Yield Act working? Are we in fact cutting at a rate that sustains the yield? Because, as you know, a lot of private Forest Services are cut very heavily and, in some instances, overcut. And there are many good sized operations that may move away from their private lands because there is not much left on their private lands. So they are now moving to the national forests and, in some respect, that is what causing some of the bidding to go up, the sale price to go up.

So what are we doing to assure ourselves that we are cutting in fact on a sustained yield basis?

Mr. Robertson. Well, we have our forest plans, and that is one of the primary purposes of those forest plans, to make sure——

Senator Baucus. But are you comfortable, even though that is the purpose of the plans, that in fact in the future, with additional pressure on the public lands, national forest lands, that there will be not overcutting?

Mr. **Robertson**. Yes, I am. Now, we get caught up in a timelag. You know, we make a plan, we set the allowable cut or allowable sale quantity on it. Time goes on. Standards change, and we learn new things. And there is usually a timelag from the time we set the allowable sale quantity until 5 years later, 10 years later, you catch up with all of those evolving standards.

And we are doing that now in these forest plans in your State. And, in many cases, the allowable sale quantity is going down, because we are catching up with those evolving environmental standards that have been accumulating over time in an integrated way, getting it in balance in these forest plans.

Now, those environmental standards will probably keep evolving, which will then make adjustments in how much timber, say, we can harvest on a sustainable basis.

Senator **Baucus**. When you say environmental standards evolving, you are referring to the Endangered Species Act in part, are you?

Mr. **Robertson**. Yes. Clean water, clean air, threatened—endangered——

Senator **Baucus**. National Environmental Policy Act.

Mr. **Robertson**. Yes, all of those things.

Mr. **Leonard**. As well as simply people's desires for the use of the forests. We are finding that there is a growing interest in wildlife.

And so, as you put more emphasis on production of elk and deer—recognizing you cannot optimize everything—if you want to put more emphasis on elk and deer, there may be some tradeoffs in terms of the total level of timber production that you can have.

Senator **Baucus**. Does the Forest Service have a view about the evolution, the change of those standards? Because, as you know, as well as anyone, the Forest Service has lost the last 13 appeals before the ninth circuit court of appeals where plaintiffs were challenging the Forest Service, claiming essentially the Forest Service did not meet the standards of the Endangered Species Act, the National Forest Management Act, or NEPA, whatnot, which has caused a change certainly in the Forest Service review policy.

Has the Forest Service taken a view that it is a neutral implementor of these legal exchanges and legal standards, or is the Forest Service at the point where it is about to recommend a change in statutory standards which will affect the court's decisions?

I am just curious where the Forest Service is. These are very important issues, as you well know, because they very directly affect the timber supply.

Mr. **Robertson**. Absolutely. And I want to tell you I am one frustrated person with all of that.

Senator **Baucus**. I don't know what the situation is in the Southern States. But, as you know, in the Northwest United States, the timber supply has fallen dramatically because a good number of appeals have been filed. And the effect of all of those appeals, in conjunction with the Forest Service losing their last 13 appeals, is just to have a chilling effect, a delaying effect on the Forest Service coming up with its final plans, or deciding finally on its projects.

Mr. **Robertson**. Yes, it has.

Senator **Baucus**. So what is the Forest Service doing about all that?

Mr. **Robertson**. Well what I see happening is constant evolution of refined and new standards based on case law. And every time we get a new court suit, the judges take it a little step further, saying we did not do it quite right.

So, we are trying to catch up with the judges on this. And we are doing our dead level best to try to meet what I call the rising standards as interpreted by the court.

But if you want to know where I come from, we are giving it our best effort, and if we cannot do it with our best effort, then we may have to come back to the Congress and ask for some help.

Senator **Baucus**. Are you running into the same problems in other forests other than the Northwest?

Mr. **Robertson**. Yes. I would say that the problem is worse. We are getting more challenges in Oregon, Washington, Montana, and Idaho.

Mr. **Leonard**. I would like to state for the record, though, that the cases that we have left, we lost in the ninth circuit, are NEPA cases, and we lost on procedural grounds. In none of those cases did we lose on the basis that we had violated any environmental standard in the Clean Air Act, Clean Water Act, or anything.

Senator **Baucus**. It is a semantic question. I do not know much about the details of these cases, but I do know that certainly the cumulative effects were not considered.

Mr. **Leonard**. That is right.

Senator **Baucus**. And I know that the court said the Forest Service should have taken cumulative effects into account.

Mr. **Leonard**. What the judges are basically saying, when you go in and do something in a development project, you have to look longer and longer and longer out into the future as to the possible cumulative effects, and you have to look bigger and bigger and bigger. And it just does not seem to me to be any sideboards right now considering how far we have to look out and how far we have to look downstream time wise.

And it is just really putting a heavy——

Senator **Baucus**. Again, what is the solution? As you know, a lot of these plans are in limbo. And they have to be resolved. Is the problem insufficient resources? You have cut back on resources, is that not true, in personnel, dollars voted to the plans, is that correct?

Mr. **Robertson**. Well, the budget is becoming stabilized in our timber roadbuilding program. But the Appropriations Committees are dealing with this now in terms of the cost. We are getting behind in our advanced timber sale preparation to the point we cannot make our timber sale program, and this is a major item right now before both the House and Senate Appropriations Committees on our 1990 budget for timber sales and roads.

Senator **Baucus**. I will ask the question a bit differently.

What is going to change? I mean is this going to continue, this catching up by the Forest Service?

Mr. **Robertson**. Well, as I explained, we are putting a tremendous amount of effort right now in retraining our people basically in the law as it has been interpreted by the court. We are doing a more comprehensive job at greater cost which further causes below-cost timber sales, and we are giving it our best effort in trying to do it. And if we fail, and it is not clear to me we are going to succeed——

Senator BAUCUS. All right. Now, by what date are you going to know whether you have succeeded or failed? Do you have a benchmark of a date, deadline date, a drop dead date?

Mr. ROBERTSON. Well, it is going to end up with how we come out in court.

If we do an environmental statement or an environmental analysis, and that is the best job we know how to do without spending millions of dollars, and the courts say that is not good enough, I will be knocking on your door that we either have to change things or get some changes in the law.

Senator BAUCUS. I appreciate the problem the Forest Service faces. Believe me, I appreciate it. The courts are changing their standards and their criteria here. And it is a moving target.

It is difficult for the Forest Service to plan and to address moving goals and moving targets. I understand that. I also understand the fact that personnel and dollars have been cut from the Forest Service in recent years which has an adverse effect.

And I further believe that the Forest Service has to do more to solve the problem.

I do not want to take too much of the subcommittee's time, but a fine example, as you well know, is the Yaak sale up in northwestern Montana where the ninth circuit, over a year ago, said, hey, better go back and do this again, and we still—just issued a draft plan—I do not know when the final plan is going to come out. Under the law, there is no time limit under which a final plan has to come out and lots of people, their livelihoods, their jobs are dependent upon this, and it is very, very—frustrating is not the word, it is aggravating. It is their life.

Mr. LEONARD. Senator Baucus, since we had the hearing here on appeals, we have won some good cases, one in the Supreme Court that overturned a ninth circuit case, gave us some substantial help in terms of the scope and the nature of an environmental impact statement.

Senator BAUCUS. Which case was that?

Mr. LEONARD. That was the case known as *Methow Valley* in Pacific Northwest. It related to a ski area and also to the construction of a dam by the Corps of Engineers. But it put some constraints on the worst-case analysis and the level of looking at community effects, and when you can go ahead, how much analysis is enough.

And we also have recently won some herbicide cases in the Pacific Northwest where the courts have reviewed our environmental impact statements on the use of herbicides and found them adequate and given us the go ahead.

So we think that we are beginning now to know what standards we have to meet on environmental statements for the courts.

Senator BAUCUS. One final question here. And that is the effect of our competitors to the north, Canada. This was the subject of, as you know, a negotiation between our two countries, regarding the rate to which Canada subsidizes versus the way we have our system.

And we agreed with Canada, whereunder Canada would agree to propose I think it is a 15 percent tax on the timber they produced to theoretically offset part of the proportionately greater subsidy that Canada provides for its operators, its producers, than we in America theoretically, arguably, provide for ours.

Has that changed the situation at all? Does Canada still set its stumpage fees at a level taking exchange rates into consideration to sell at U.S. markets in competition but for that 15 percent fee, is that——

Mr. LEONARD. It is changing, and the amount of change varies among the Canadian Provinces. Several of the Canadian Provinces have revised their stumpage practices, raised their stumpage prices and, therefore, have been able to discontinue the collection of the 15 percent fee.

There are several provinces that have not taken action yet. So it is having some impact. And the major producing province is probably of concern to the people in the Northwest. British Columbia is one of the provinces that has changed its stumpage practices.

Senator BAUCUS. Finally, on that point, is it your personal view that Canada still, in effect, subsidizes its producers more, that it, it essentially would have a lower cost, if you will, than the United States, even with the changes and even with the 15 percent——

Mr. LEONARD. I do not think I can make that judgment about the provinces that have made the changes. Certainly those that are still subject to the 15 percent tax, I think, have problems in the way they set stumpage fees.

Senator BAUCUS. Do you know how much Canadian softwood comes into the United States, because it was about 30 percent a couple of years ago?

Mr. LEONARD. The figures that I saw at about the high point were about at 33 percent. The last figure I saw was down about 28 percent or so.

So, as the market has slackened over the last 2 or 3 years as our housing starts have slowed up, the Canadians have taken a disproportionate share, from their standpoint at least, of the reduction.

Senator BAUCUS. Thank you, Mr. Chairman.

Senator FOWLER. Thank you.

We are joined by the Senator from Washington, Mr. Gorton. Welcome.

Do you have any questions of the Forest Service? We have been keeping them on a long time. We have a long way to go. But I do not want to cut you off with the Chief here.

Senator GORTON. I have a relatively few questions. I have a short opening statement.[1] I will just ask to put it in the record.

Senator FOWLER. All right. Thank you.

Senator GORTON. I understand that you have answered some questions with respect to below-cost timber sales during the course of the afternoon.

According to your accounting practices, how does region 6 compare with the other regions across the country in that connection?

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[1] See page 3 for the prepared statement of Senator Gorton.

Mr. LEONARD. Region 6 is one of our high-value regions. And in our 1988 report, all of the forests in region 6 were positive by a significant margin.

Senator GORTON. Are we in the black?

Mr. LEONARD. Yes.

Senator GORTON. Is it true that region 6 is primarily responsible for the system as a whole being in the black?

Mr. ROBERTSON. Yes. About 60 percent of our receipts come from region 6. Last year, $860 million came from region 6 out of a total of $1.4 billion.

Senator GORTON. Let me go on to a different subject.

What is the Forest Service's current definition of sustainability? For example, if in region 6 there were to be 10 acres of harvested timber with the timber harvest, and a volume of 50,000 feet came off that 10 acres, would sustained yield mean that when the next harvest occurred, you would again bring at least 50,000 board feet from those same 10 acres?

Mr. LEONARD. We look at the forest as a whole. And when we set our sustained yield——

Senator GORTON. Nationwide.

Mr. LEONARD. No. Each individual national forest, but not 10-acre blocks, because there is so much variability. Some stands have very good stocking, very good quality, and some stands do not.

So we look at the forest as a whole. And when we set our allowable sale quantities, we set it at a level which, for the forest as a whole, can be sustained in perpetuity. In fact, in most cases, we find that we set it at a level—and as you project out over time, assuming the same level of management over that time—that we could increase out over time as the growing stock on all acres comes up to standard amount.

So, on each forest as a whole, it is set at a level which can be sustained out over the future, but not acre-by-acre.

Senator GORTON. But not by acre.

Mr. LEONARD. Yes.

Senator GORTON. Does that sustainability definition imply the proposition that 40 years from now the same number of acres in a given national forest will be available for timber production?

Mr. LEONARD. Yes, it does. You make the assumption of what is your timber base.

Senator GORTON. So it does not account for any set-asides?

Mr. LEONARD. It makes certain assumptions about the level of timber, that is the area of land that is going to be managed for timber. That area is always less than the total acreage. In fact, if you look at the National Forest System—there are 191 million acres in the National Forest System—when we get through with our forest plans, I think that we will be planning timber production on something less than 60 million acres.

So, 1 acre in 3 is what we plan to manage for timber production. A lot of areas are not planned for production either because they are not suitable for timber production or because we have assigned them to some other use.

Senator GORTON. I want to reemphasize that, that of the national forests in the United States, fewer than one-third of the acreage is considered appropriate for timber harvest and primarily for timber management.

Mr. **Leonard**. Well, some beyond one-third of the acreage is appropriate for timber harvest in the sense that it could be managed. But because we see other values, such as wilderness or spotted owls, substantial areas that have the capability to produce timber are not planned for timber production in order to protect those other values.

Senator **Gorton**. But let us take that 60 million acres now. As you deal with planning and sustainability, you assume that that entire 60 million acres will continue to be available for harvest?

Mr. **Leonard**. That is correct. And then we also have to match that with assumptions on the intensity of management.

Senator **Gorton**. Again in region 6, what is the projected impact on sustainability for forest resources there in relation to spotted owl management?

Mr. **Robertson**. Well, in the Forest Service's spotted owl plan, it is a little less than 400 million board feet per year.

If the spotted owl is listed, and we have to protect most spotted owl habitat, we are looking at maybe a reduction of 1.5 or 1.6 billion board feet per year.

Senator **Gorton**. Four times as much as your plans?

Mr. **Robertson**. Four times, yes.

Senator **Gorton**. And that is out of how much that would otherwise—how many board feet which would otherwise be considered to be a sustainable yield?

Mr. **Robertson**. Well, under the new forest plans, or the draft forest plans, we are looking at probably 4.5 or 4.6.

Senator **Gorton**. So more than one-third of it at that maximum?

Mr. **Robertson**. Yes.

Senator **Gorton**. Do you consider, or do you know whether or not those larger set-asides will impose such pressures on State and private lands as to have adverse impacts on their sustainability?

Mr. **Robertson**. You mean because of the spotted owl?

Well, the Threatened and Endangered Species Act applies to Federal lands———

Senator **Gorton**. No, no. If, in fact, you have to take that much out of production, is that going to put a kind of pressure on State and private lands that will affect, in your view, their being able to use, be able to be managed on a sustained yield basis?

Mr. **Robertson**. Well, one or two things have to happen. You have to, over the short run, overcut the private land or State land, or you have to have a phaseout of your mill capacities. So, one of the two have to happen.

Senator **Gorton**. Those are the only two alternatives, are they not?

Mr. **Robertson**. Yes.

Mr. **Leonard**. We know that today the current harvest levels on private lands in the Pacific Northwest are not sustainable. The harvest levels will be going down on private land, so there simply is not the capability to substitute. You cannot move the production———

Senator **Gorton**. Even before the spotted owl contributions, they were———

Mr. **Leonard**. That is right.

Senator **Gorton**. Private lands were being harvested at a more than sustainable, more rapidly sustainable level.

Mr. **Leonard**. That is right. So you simply do not have the capability of moving the harvest levels off the national forests on to private land.

Now, if you take the country as a whole, you get into a different story. But in the Pacific Northwest, there is not the capability over the long run to move harvest levels off the national forests on to private lands.

Senator **Gorton**. Thank you for indulging me, Mr. Chairman.

Senator **Fowler**. Thank you very much, Slade.

Mr. Leonard and Chief Robertson, thank you very much for your public service and also for your testimony.

Mr. **Robertson**. Thank you. Did you want us to stay for the rest of the discussion?

Senator **Fowler**. Only if you want to hear it. I know you have other things to do.

Mr. **Robertson**. I would love to hear, but I have some things I need to do.

Senator **Fowler**. I understand.

Mr. **Robertson**. Thanks.

Senator **Fowler**. Ladies and gentlemen, we are running longer because the subject is of interest, and also the nature of our sort of floating business here.

Let me ask—help me out here. I am sort of trying to do this off the seat of my pants. Those people who are on one of the four additional panels, especially those of you from Washington that do not have planes to catch, I am trying to divide this up so we spend about another hour and a half today, and then come back at 3 o'clock tomorrow for another 2 hours. Otherwise, we are going to be here until about 6 o'clock tonight.

How many of you could testify tomorrow at 3, between 3 and 5? Would you stand? Three. Is that all? Well, we cannot do it then.

All right. Dr. Fred Cubbage, Dr. Jordan, Mr. Mixon, and Dr. Simberloff. Please join us at the table.

Let me introduce you all. I will introduce you one at a time. And to the extent you can possibly summarize your testimony, I think what we will have to do is to hold it to about 5 minutes each. All of your written testimony will be inserted in the record, in order to leave some time for questions.

A light will come on at the end of 5 minutes. And when that happens, if you can wrap up as quickly as possible, I hope you understand.

Dr. Fred Cubbage, professor of the School of Forestry Resources at the University of Georgia in Athens.

Dr. Cubbage.

## STATEMENT OF FREDERICK W. CUBBAGE, ASSOCIATE PROFESSOR, FOREST ECONOMICS AND POLICY, SCHOOL OF FOREST RESOURCES, UNIVERSITY OF GEORGIA, ATHENS, GA

Dr. **Cubbage**. Thank you, Senator.

My remarks here today will be somewhat general. The topic that we were assigned was looking at harvesting and regeneration rates on public and private lands. And while I am representing the University of Georgia, I am in some sense perhaps representing the National Association of Professional Forestry Schools and Colleges who perform research and teach on forestry and forestry issue.

I am a forest policy teacher and do research in forest economics as well, which has already been taken in vain here today.

### ADDRESSING THE ISSUES FROM A GENERAL POLITICAL SCIENCE PUBLIC POLICY ASPECT AND HOW THESE ISSUES MIGHT BE BALANCED AMONG THESE DIFFERENT INTEREST GROUPS

But let me address some of these issues perhaps in a general political science public policy aspect, and then how some of these issues might be balanced among these different interest groups.

### CURRENT ISSUES

As we are aware, harvesting and regeneration is becoming much more important on public and private lands, on national forests in the West, national forests in the East, and private lands. Perhaps foremost among these issues is the question of whether these forests ever should be harvested.

### PUBLIC LANDS AND PRIVATE LANDS

On public lands, many groups favor wilderness, recreation, and nontimber commodities perhaps over timber commodities. And, indeed, on private lands, including in our State of Georgia, many neighbors oppose logging, many city ordinances exist to preserve trees, and tree preservation is of great concern.

But this also is important because forest industries are a vital basic manufacturing sector, one of the most vital basic manufacturing sectors the country has, including lumber and plywood, for exterior uses and inside houses and, of course, pulp and paper for consumer goods, diapers, writing paper, testimony, and the like.

### QUESTIONS

The real question perhaps is how much private and public capital should we devote to growing timber? Are public lands growing or cutting too much timber or not enough timber? Should private lands perhaps grow more to supplant the public lands as we have heard? Do private forest landowners plan and manage their forests adequately, and do we need more public programs to help with these particular concerns?

### PUBLIC POLICY

Now, there has been a long history of public policy fostering forest management in the United States. The United States started its first century with essentially a policy of laissez faire—the disposal of all public lands. This led to a pervasive sentiment that we were mismanaging our forest resources at that time, and Government set-asides and reservation of about 200 million acres of national forest land which we presently own.

The Government also has provided and continues to provide private land owner assistance to private forest land owners, property and income tax benefits at various times and in various means, cost share and incentive programs such as the Forest Incentives Program, Conservation Reserve Program and, of course, regulation of forestry is as common in the Western States and becoming considered in many Eastern States as well.

All of these public policies seem designed to grow more timber, produce more game and nongame species, protect rare and endangered plants, enhance water and air quality, regulate water quantity, and many other purposes.

Some of the issues that are most important on public lands are, of course, how do we manage the old-growth forests? They do have critical wildlife habitat and, indeed, have the only standing old-growth forest basically remaining in the United States. However, they also produce the largest share of softwood timber in the West, as we have heard, and a significant share of hardwood timber of quality in the East.

The question really becomes should we harvest much of these forests or should we not? What is the balance? And this becomes a question between old-growth timber or, as we are hearing nowadays, preserved ancient forests for other values.

It may also perhaps be a question of recreation based versus timber based economies. Clearly, the old days of cut out and get out were not adequate, and the Forest Service certainly does not manage as such. But perhaps not everyone can make money and make a living by selling honey and boiled peanuts as some people do in the mountains of Georgia.

### BELOW-COST TIMBER SALES REMAIN AN IMPORTANT CONCERN

Below-cost timber sales remain an important concern. But, of course, we should keep in mind that below-cost timber is not the only below cost commodity produced in national forests. Wilderness, recreation, and all other goods are also produced at cost to the national forests that exceed the payments that it receives.

Another concern on public lands certainly is even if we do harvest timber, what type of harvest should occur? Selective cutting and natural harvest are often preferred by many groups.

Does the red light mean I should stop?

Senator **Fowler**. It should, but you can go on.

Dr. **Cubbage**. Excuse me. I will be brief.

### CLEARCUTTING IS CHEAPER

Clearcutting is cheaper. It favors important softwood species and is also not different than in many natural stands where you have massive insect kills, Yellowstone type fires which essentially clear large areas of forest at once.

### PRIVATE LANDS ASSISTING LANDOWNERS

Very briefly then, on private lands, there are many reasons we might assist forest landowners to grow and manage their forests. It takes a long time to get returns. There are many market failures in forest processes. Prices do not affect planning rates much. There is poor knowledge, and there is very little payment that these owners receive for producing environmental benefits that the forests produce. So, therefore, we might manage these private lands more intensively.

### CONCLUSION

Briefly, in conclusion, I think the present demands on forest land increase the tension among groups, as we know. We must balance economic returns against environmental benefits, and we must also consider private landowners' rights versus the broad social goals that many people advocate as well. Undoubtedly, more public land will be devoted to wildlife protection. Hopefully not to the point of efficient firms will be forced from business, because forest products are a principal contributor to rural economies and do contribute to rural development and ameliorate the trade deficit of which we hear much about.

Public policy should favor prudent growth and harvest, regeneration by either planning or planting, production of more nonmarket and environmental benefits and retention of a competitive forest products industry. Thank you.

[The prepared statement of Dr. Cubbage appears at the conclusion of the hearing.]

Senator FOWLER. Thank you very much, Dr. Cubbage.

Dr. Carl F. Jordan, Institute of Ecology at the University of Georgia. Welcome, Dr. Jordan.

## STATEMENT OF CARL F. JORDAN, SENIOR ECOLOGIST, INSTITUTE OF ECOLOGY, UNIVERSITY OF GEORGIA, ATHENS, GA

Dr. JORDAN. Senator Fowler, I feel somewhat scooped by your questions to the Chief of the Forest Service, but I will go ahead with my testimony anyhow because it reinforces some of the points which you were attempting to make.

### UNDERVALUING OF FOREST PRODUCTS

The greatest present threat to the sustainability of timber supply, as well as associated benefits of forest lands such as wildlife and recreation, is the undervaluing of forest products. The threat stems from the law of supply and demand. If a resource or good is underpriced or undervalued, that resource will be squandered or used inefficiently.

Evidence for present undervaluation of forest products is the below-cost timber sales that occur on our national forests. The price that the timber companies pay for timber on many of our national forests is less than it costs the Forest Service to make the timber available.

### REASONS FOR BELOW-COST SALES

Why are there below-cost timber sales? In some areas, part of the cost of managing the forests, including costs of roadbuilding, is charged against benefits such as wildlife, water, and recreation. However, there is a serious question as to the assumptions underlying this approach. While timber harvest does increase such species as white-tailed deer, it diminishes rare species such as the spotted owl, which is dependent on old-growth forest. Building roads into the national forests may increase access for some tourists, but such roads seriously decrease or eliminate the benefits for those who value the wilderness experience.

And, of course, in some areas such as the Tongass Forest in Alaska, below-cost timber sales are conducted to promote the regional economy.

### HOW FOREST HARVESTS ARE DECIDED

How then are forest harvests decided? As we have heard, the marketplace plays little or no role in determining the amount of timber to be harvested on public lands. Forest harvest has been based on congressional mandate or Forest Service administrative decisions. Although the Forest Service conducts what are called "Timber Sales," they are not sales in the usual sense. The "sales" are really purchase agreements. Sales in the usual sense reflects costs plus reasonable profit. So the below-cost timber sales result in the growth of a timber industry and a timber consuming group that does not pay for the true cost of producing that timber. Consequently, there is no long term stability built into the forest products economy.

### THREATS TO THE FOREST ENVIRONMENT

Now are there any threats to the forest environment? Well, management activities themselves, such as harvesting, theoretically will not necessarily degrade the forest. The erosion, the washouts are a result of continuing bulldozing necessary for roadbuilding activities. Roads cause the erosion which damages the forest production and silts the streams which you have already pointed out in your original remarks.

### POSSIBLE SOLUTIONS

Well, what are some of the possible solutions to the imbalance resulting of below-cost timber sales? Prices for stumpage and for timber products should reflect the true total cost of producing, managing, and harvesting the timber crop. We should not try and cloud the issue by saying, oh, we're benefiting the wildlife, we're benefiting the tourists, things of that nature. That's clouding the issue. We should set the price of timber sales at the cost of producing that timber itself. We should not be subsidizing timber using industry, the timber consuming forest industry.

It's not incumbent upon the U.S. Government to supply cheap timber and supply cheap forest products to the public of the United States. It is up to the public and the forest industries of the United States to pay the full and true cost of producing this timber. This is capitalist economy. And as you pointed out it's not a socialistic economy.

In the short run, of course, this will drive up the wood prices. And it will drive some of the mills out business. And this will be unfortunate. But we can make an analogy with the emission controls on automobiles—it drove up the prices of automobiles, but certainly, in the long run it was beneficial for the United States as a whole. It was beneficial for the car industry. And in a like manner, driving up the prices of the timber will, in the long run, ensure the sustainability of the forest resources, just as emission control sustainability sustained the clean air in the United States. And it will also bring in private investors into the market.

### PRIVATELY OWNED LAND

On private land, the situation is highly variable, but for example in the State of Georgia, many of our forests are on lands abandoned after the cotton fields, and there was very little cost involved in establishing these forests. So, it's questionable whether buyers of timber from private land at the present time are paying the full cost of replacing that timber through plantings.

### CONCLUSION

In conclusion, an approach that fixes the price of forest products at a level that adequately reflects the costs associated with managing and harvesting those products may be the most appropriate way to ensure a sustainable supply of timber.

Thank you.

[The prepared statement and letter of Dr. Jordan appear at the conclusion of the hearing.]

Senator FOWLER. Thank you, Dr. Jordan, very much.

Mr. John W. Mixon is next, a State Forester of Georgia and representing the National Association of State Foresters. Welcome John.

## STATEMENT OF JOHN W. MIXON, DIRECTOR, GEORGIA STATE FORESTER, NATIONAL ASSOCIATION OF STATE FORESTERS, MACON, GA

Mr. MIXON. Thank you, Mr. Chairman, other members of the subcommittee, my name is John Mixon, State Forester of Georgia. I consider it a privilege to be here today representing the National Association of State Foresters. The primary responsibility of our agencies is to protect and manage State and privately owned forest land in our respective States.

### STATE FORESTRY AGENCIES

Collectively, State forestry agencies protect, service, or manage over 80 percent of this Nation's forest land—or about 500 million acres. They work cooperatively with private, Federal and other State agencies, organizations, and individuals in directing and strengthening all forestry programs.

### NONINDUSTRIAL PRIVATE LANDOWNER

We've heard it mentioned several times about the nonindustrial private landowner. The increased commercial wood production from the nonindustrial private forest landowners could reduce the pressure on the public forests as we've heard mentioned several times here today. Three-fourths of the commercial timberland in the United States lies in private hands. In the South, for instance, about 70 percent of the most productive timberland is privately owned.

Nonindustrial private landowners hold enormous promise for increased commercial wood production. However, most nonindustrial private lands is not actively managed. In fact, the U.S. Department of Agriculture has estimated that at least 120 million acres of currently undermanaged private timberlands are idle, cropland could produce substantial additional quantities of commercial wood. Although private forest lands contribute nearly half of the country's total timber harvest, they account for only one-third of its overall reforestation.

## SOUND MANAGEMENT

Sound management, of course, is crucial to increasing the productivity of our Nation's forest resources. Proper management practices—use of techniques such as vegetative buffer strips around rivers and streams, careful logging road construction, selective harvest—provides many benefits. Sound forest management can prevent watershed and soil damage, enhance the regeneration of healthy forests, and protect wildlife habitat. The key is the careful tailoring of practices to individual site characteristics.

## VARIETY OF ASSISTANCE PROGRAMS

There are a variety of assistance programs that attempt to reach the private forest landowner. The States provide much of the administration for Federal programs, and nearly all education and technical assistance is funneled through the State foresters. Most State programs are directed at activities such as water quality protection, reforestation, timber management, and wildlife and aesthetic management. Several States provide their own cost-share programs for tree planting and timber stand improvement.

The U.S. Forest Service, through its State and Private Forest (S&PF) branch, is structured to provide technical and financial support for improved forest resource management, utilization, protection, and planning on non-Federal forest lands. Several other Federal assistance programs, such as the Forestry Incentives Program and Agricultural Conservation Program (ACP) provide landowners with limited cost-share assistance that might include site preparation, tree planting and/or stand improvement practices.

In Georgia we receive approximately $1 million through the Forest Incentive Program. We have a request for $17 million from the private landowners. There is that many requests if we had the money. The ACP Program is also not funded to the point that we need for private landowners.

The payoff associated with Federal and State programs that reach nonindustrial private owners are substantial. Technical assistance increases the probability of harvest, regeneration, what the landowner receives per unit of the timber and present value per acre of forest holdings. Moreover, public forestry assistance can pay off in the form of increased income tax revenue to public treasurers.

### PROGRAMS ARE NOT NEARLY LARGE ENOUGH

Unfortunately, these programs are not nearly large enough. Currently, the Government is assisting timberland owners on about 1 percent of the country's 333 million acres of private forest land. Federal and technical assistance programs are reaching less than 200,000 of the country's nearly 8 million nonindustrial private landowners.

The Chief mentioned about the budget on these nonindustrial programs. My data indicates that these programs have been going down since 1982. There are several other projects that are listed under these State and private funds, but the actual dollars that go to assist the private landowner has certainly been going down since about 1982.

### STEWARDSHIP PROGRAM

Finally, permit me to mention a program that the National Association of State Foresters and the Forest Service have been working on. I've heard it mentioned several times here today. It is the Forest Stewardship Program. This is a new initiative that we're trying to get underway this year, that will incorporate, not only timber production, but wildlife habitat, water quality, soil erosion, all into one program. It's a program that has become before the House and Senate Appropriations Committees this year. I think it would be a fantastic program to try to get that private landowner to do a better job to manage his timber—to manage it for wildlife, water quality, and aesthetics, all these tied in together.

Many landowners in the South are leasing their timberlands today. They're making some money from the recreational end of it—or from the hunt end of it. But, Senators, here's a great opportunity to really increase the amount of timber that we can produce on these private holdings. We must get these private lands managed correctly.

Thank you very much.

[The prepared statement of Mr. Mixon appears at the conclusion of the hearing.]

Senator **FOWLER**. Thank you Mr. Mixon, very, very much.

Dr. Daniel Simberloff, professor of the department of biological science at Florida State University in Tallahassee. Welcome, Dr. Simberloff.

## STATEMENT OF DANIEL SIMBERLOFF, ROBERT O. LAWTON DISTINGUISHED PROFESSOR OF BIOLOGICAL SCIENCE, FLORIDA STATE UNIVERSITY, TALLAHASSEE, FL

Dr. **SIMBERLOFF**. Thank you, Mr. Chairman, for the opportunity to talk to you. I guess as the only person at this table not from Georgia, I should introduce myself, a bit. I actually live 22 miles——

Senator **FOWLER**. We send missionaries to Florida, we know where it is. [Laughter]

Dr. **Simberloff**. I live in a national forest, the Apalachicola Forest, exactly 22 miles from the Georgia line. And my students and I have worked on the interaction with animals and plants in the national forest and other national forests for many years.

### FOCUS ON TWO PARTICULAR PROBLEMS

I want to focus on two particular problems that exemplify situations throughout the entire National Forest System. The two problems are the management of the northern spotted owl in the Northwest and the red-cockaded woodpecker in the Southeast. In each instance a species is gravely threatened by habitat destruction, this threat was recognized well before substantive action was taken, and when the action was taken, it was insufficient and often perfunctory. Most importantly, these birds are not the only threatened species in these forests whose continued existence is in doubt—they just happen to know enough about them to know that there's a problem.

### BIOLOGY OF THE SPECIES

Both species, the owl and the woodpecker, require enormous acreages of old growth forests. Thousands of acres in the case of the owl. And in each case, about 5,000 to 6,000 individuals probably remain. They used to occupy enormous, continuous expanses of forests. But now their habitat's fragmented into increasingly isolated sections, so they've become almost island-like species.

Out of 70 million acres of longleaf pine, which is the woodpecker's major home, that used to exist in the Southeast and covered most of Georgia, by the way, only about 10 million acres remain. Even this figure is deceptive because most of that is relatively young, second growth, and the natural fire regime that maintains that kind of habitat has been disrupted. In the Northwest there were originally about 15 million acres of old growth. The Forest Service now says there are about 4 million acres, but a recent very thorough study shows that maybe 2 million acres of that might be suitable owl habitat. So, both of these birds are restricted to smaller and smaller islands of suitable habitat in a sea of second growth and agriculture and other kinds of development.

### HISTORY OF THE THREAT AND OF SUBSEQUENT MANAGEMENT

The owls requirement for old growth was known in the early 1970's. In 1973 an interagency committee recommended that at least 300 acres of old growth be left around owl nests, but this was rejected by the Forest Service. In response to a lawsuit in 1980, the Chief of the Forest Service finally called for analysis of the owl populations.

In the 1981 regional plan and the 1984 impact statement, the Forest Service proposed reducing the population on national forests of the owl in Washington and Oregon to 375 pairs on 1,000 acres of old growth each. This was at a time when it was already known that they typically required 2,000–7,000 acres as a home range. This decision was in spite of the growing scientific consensus. In fact, a panel was convened by the major professional ornithological associations in the United States and recommended as a bare minimum, larger numbers and much larger home ranges. The 1988 Forest Service plan still recommended substantially fewer pairs and smaller home ranges than the panel suggested and proposes to destroy about half of all owl habitat in the next century.

Senator **Fowler**. What increase was it over what they'd had the year before?

Dr. **Simberloff**. Originally they had asked for 300 acres, then 400 acres, and now the preferred alternative is 1,000 acres.

We should recall that in the southern part of the range, in northern California they typically require about 2,000 acres. In the State of Washington, the northern part of the range, about 7,000, 5,000 to 7,000. In Oregon, an intermediate amount. So very insufficient compared to best expert advice.

## LIST OWL AS ENDANGERED

At the same time the environmental organizations petitioned Fish and Wildlife to have the owl listed. In late 1987 the Fish and Wildlife, in accord with an interagency agreement with the Forest Service, decided not to grant the status. However, a Federal district judge ruled that the Fish and Wildlife Service own scientists determined the bird was disappearing and this year of course, the General Accounting Office concluded that there were political considerations brought to bear on the matter. Finally, in April 1989, the Fish and Wildlife Service reversed its decision. And in response the Forest Service now is apparently seeking "a phased reduction" in harvesting owl habitat, not a cessation of harvesting the owl habitat.

## THREATS TO THE RED-COCKADED WOODPECKER IN THE SOUTHEAST WERE KNOWN AS EARLY AS 1939

Threats to the red-cockaded woodpecker in the Southeast were known as early as 1939. In 1970 the bird was declared an endangered species in the United States, even before the Endangered Species Act, in fact. We had a list. In 1975 a Recovery Team was appointed for the woodpecker and in 1979 Fish and Wildlife accepted their recovery plan. But immediately the Forest Service attempted to revise downward the management provisions in that plan. And at the same time new biological information became available suggesting even the original plan was insufficient. But the Recovery Team was not allowed to amend its plan and it was disbanded in 1982. In 1983 the Fish and Wildlife appointed and contracted with a Forest Service biologist to produce a new plan, which was accepted.

As with the spotted owl, there was a committee appointed by a major ornithological organization in the country to examine the woodpecker. They found that the species at that time had been declared endangered for 15 years, and there was still no plan whatsoever to increase its numbers and the bird was still decreasing rapidly. The committee found forestry practices like early harvesting and clearcutting to be the problem. Also as with the owl, the committee found that the recovery plan always emphasized the absolute minimum that might sustain the species—minimum areas for each clan, minimum population sizes, minimum ages for trees, et cetera. And, as with the owl, the Forest Service constantly emphasizes maximum prospects for population persistence—maximum use by birds of the habitat, maximum survival, maximum reproduction, et cetera.

As in the press release by the Forest Service on March 29, 1989, announced a new woodpecker policy.

[The prepared statement of Dr. Simberloff appears at the conclusion of the hearing.]

Senator **Fowler**. I'm going have to cut you off on press releases, Dr. Simberloff.

Dr. **Simberloff**. OK.

Senator **Fowler**. I'm going turn the questions over to Senator Gorton. But while we're on this point, since I had to cut you off. Are there any private landowners—large land holdings that are doing a commendable job on the protection of wildlife habitat?

Dr. **Simberloff**. For both of these species, almost all of the remaining individuals are on Federal lands. For the spotted owl, apparently, over 90 percent. For the red-cockaded woodpecker, at least 85 percent. So, the few landowners in the Southeast that actually have suitable longleaf pine, and there are very few, are managing very well. The Wade tract in Georgia is a good example, and has a small population. But, if you added them all together, there's such a small amount of land that they could not come close to sustaining the wildlife.

Senator **Fowler**. Leaving the owl and the woodpecker aside for a moment. Again, looking at large timber companies and the largest private tracts, do any of those companies have a wildlife habitat management program?

Dr. **Simberloff**. Yes. I believe that they all do. The one I'm most familiar with is International Paper. But their lands do not really, at this point, include suitable habitat or much suitable habitat for either of these birds.

Senator **Fowler**. It's not necessarily their fault. It's just the type of the lands that they have.

Dr. **Simberloff**. Right, they just don't have the right kind of lands for these birds or for the other species associated with them.

Senator **Fowler**. Right. I'm going to let Senator Gorton go first with the panel and then I'll follow up.

Senator **Gorton**. Doctor, in your view, how many lives and careers are equal in value to one pair of spotted owls?

Dr. **Simberloff**. I'm agnostic on that question. I'm not an economist and I have no expertise. I do understand a lot about population dynamics of the owl, but as to what it's worth, I leave that to Congress.

Senator **Gorton**. Not much about the population dynamics of people?

Dr. **Simberloff**. I know a lot about the population dynamics of people, but to assess the worth of a job as opposed to the worth of a species, or an industry, it's simply not my area. Sorry.

Senator **Gorton**. Are you simply telling us that how many acres of old growth are necessary to support the pair of spotted owls and making no value judgment at all as to whether or not we ought to do something?

Dr. **Simberloff**. That's correct. I have feelings of course, but I can't pretend expertise about whether we should or shouldn't do something of this sort.

Senator **Gorton**. Well, let's go to those feelings. Maybe this is a wrong impression from your testimony, but I gather from it that you would prefer to see our forest resources sustained for purposes other than timber production? Given the increasing demand for wood products, what would you suggest that we do with our forest resources?

Dr. **Simberloff**. I believe there are management practices that are not at this time critical to our wood supplies, that are nevertheless normal practice within the Forest Service, that are inimical to both of these birds and the many other species. So, I do not feel that maintaining populations of these birds necessarily will force a decrease in the timber supply.

Senator **Gorton**. Well, then you disagree with the testimony of the preceding witness that it would require a reduction from 4½ billion by 1½ billion board feet in region 6.

Dr. **Simberloff**. Absolutely. That was in region 6. I believe it would require a reduction. I'm skeptical it requires that much of a reduction, and nationally, I believe that it would not require a reduction.

Senator **Gorton**. Well, you're skeptical it would require that much, but your statement with respect to the number of acres needed for each pair of spotted owls is higher than any of the acreage used in those projections.

Dr. **Simberloff**. Yes. Mine is on the basis of the committee formed by the American Ornithologists' Union and the Cooper Ornithological Society, so it's the best scientific information available.

Senator **Gorton**. But your scientific conclusion then, would probably be that it would require a reduction in region 6 by roughly half of the——

Dr. **Simberloff** [interrupting]. Of certain kinds of timber. But the total board feet or cubic feet, I believe, would not have to be reduced by as much as the Chief suggests.

Senator **Gorton**. Can you tell me by how much?

Dr. **Simberloff**. I would have guessed about 15 percent. Whereas the figure he gave was around one-third, I believe. This is board feet, not a particular kind of board foot.

Senator **Gorton**. He was speaking of board feet in an entire forest region.

Dr. **Simberloff**. Yes.

Senator **Gorton**. You think the actual reduction, in order to meet your goals, could be as low as half of that amount?

Dr. **Simberloff**. Yes. With appropriate change and current forestry management practice.

Senator **Gorton**. What are those appropriate changes?

Dr. **Simberloff**. I believe there could be far more selective logging in areas that now are very marginally logged. I believe that there could be a much greater recovery of slash and other kinds of wood that are now treated as debris in the United States, but in Europe and Asia have been timber for over a century, those would be the main two.

Senator GORTON. Well, within the Olympic Peninsula, it requires 5,000 to 7,000 acres for each pair of spotted owls. How much of that can be cut without destroying that habitat for a pair of owls, effectively or otherwise?

Dr. SIMBERLOFF. Yes. We're not sure, but it appears that the owls need a certain amount of contiguous area around their nest site. And then they have to be able to forage and not have to cross very large areas, over an area of several thousand acres as you say, and it seems quite possible to a qualified observers that a number of trees could be removed but not clearcut, because this would create the sort of a situation in which they do not function well from these larger surrounding areas.

Senator GORTON. So it is your view that there could be—could I call it a substantial cut, even in those 5,000 to 7,000 acre, set asides as long as it was not a clearcut?

Dr. SIMBERLOFF. As long as it was not a clearcut and was selective in many other ways. There are certain kinds of trees that are very useful to the owls, and there are certain kind of habitats very useful to their prey. And these could be facilitated by selective cutting. Which of course incurs its own cost. But, yes, it is my feeling that there could be substantial timber removed even from these very large home ranges.

Senator FOWLER. Mr. Mixon, you heard the testimony of the Chief and his Assistant of the Forest Service. Do you think we're doing enough to encourage conservation in the Forest Service and at the Federal level?

Mr. MIXON. Yes, sir. I think the Forest Service is doing a pretty fair job on their forest lands. When they carry out a timber harvest they generally do much more than the private landowner on their lands. We do need more funds directed toward that private landowner. I think that's the key to a lot of the future timber that we're talking about out here. Many of our private landowners are not going to do anything to improve their forest management unless they have some type of incentive either from the Federal or the State governments.

The guy that owns or the lady that owns 100 acres or 500 acres of land, many times will cut that timber and they do nothing to reestablish that stand. This is the group of people that I see as a great opportunity.

The Forest Service, again, I think they do a pretty good job when they harvest timber on their properties. They do a good a job of seeding the roads. They're very concerned about best management practices. As a general rule, they do an outstanding job on managing their lands.

Senator FOWLER. You know I'm a supporter of your forest stewardships programs, and one of the lines we've been discussing here, do you also see that kind of program as the best way to preserve and sustain wildlife habitat on the private lands?

Mr. MIXON. Yes, sir. I grew up on a cotton farm down in southeast Georgia and I never saw a deer while growing up as a boy during the 1950's. I never saw a deer until we went to the zoo in 1955, in Atlanta. Today my family still lives there and you can't hardly have a garden for the number of deer in the area. We will harvest more timber in that area than we've ever harvested before and most wildlife is plentiful.

You can definitely manage timber, harvest timber, and do an excellent job with wildlife. Most foresters today, whether they're State foresters, industry foresters, or consulting foresters, are including wildlife management as a part of their timber management plans.

Some private landowners are leasing their forest holdings for enough money to pay their taxes each year. Naturally the better the land is managed for timber and wildlife the more profit the landowner will receive.

Senator FOWLER. Dr. Cubbage, there is criticism that one of the problems, both in Federal and private lands, on selective cutting and the abundance of clearcutting, is that foresters today simply do not have the expertise to mark the trees and select the trees and do the job, and that clearcutting, in many cases is the easy answer because that expertise is not available.

Dr. CUBBAGE. That's probably not entirely the case. Selective cutting certainly has some advantages. It does seem much more natural and it may favor longer rotations. It does not favor intensively managed stands and selective regeneration does require a good bit more risk and planning, more than artificial regeneration or planting, where you can do it as if it were a farm crop.

Senator FOWLER. On the other side of that. What I was really getting at. I appreciate that answer, but what I was really getting at is, as a professor at the school, I wanted you to discuss the training of our foresters and whether or not they're up to snuff.

Dr. CUBBAGE. I certainly would not malign our foresters as I am one of their teachers. But certainly foresters——

Senator FOWLER. I hear a lot of students who have no problem maligning their teachers.

Dr. CUBBAGE. Well, we do not want to return the favor. But certainly there was for many years a tradition of natural stand management in the United States as we started our forestry profession. And perhaps with industrial forestry rising as it did in the 1940's and 1950's and 1960's, we focused much of our research and teaching on planting and artificial regeneration. But certainly there is much to be said now of the research that is going on in natural stand management. And while the schools perhaps focused to excess, and the Forest Service and the profession has been criticized for excessive focus on artificial regeneration, certainly that is changing and there is much more attention paid in both research and teaching to natural regeneration and selection harvest.

Senator FOWLER. Dr. Jordan, how do you react to the Forest Service discussion of what constitutes or should constitute the definition of sustainability?

Dr. JORDAN. There are three kinds of sustainability. There is ecological sustainability. Ecological sustainability is shown by the natural forest which has been growing for millions of years. There's technological sustainability which they teach in the schools of forestry. In other words, we know how to make the forest grow, if we add the fertilizers, if we supply the seeds. And then there's economic sustainability, which means the forests, including the national forests, will only go on if part of the profit from sales is reinvested in new forests. Forests will be sustainable if you make enough profit to make it worthwhile to reinvest.

I think economic sustainability is the bottom line. I think ecologists, and myself included, sometimes talk too much about ecological sustainability. I think the Forest Service in the technical aspect of it, talks too much about technical sustainability. But I believe that the Forest Service has lost sight of economic sustainability, which means you have to charge the price for the good which will induce the investor and induce the producer to invest. In this case, perhaps the investor is the U.S. Government, to charge for the system to make timber or wildlife or whatever resource, payoff in the long run. And that's why I'm so much against, this below cost timber sale because it undervalues and trashes, so to speak, the values of the forest. We have to pay for this resource and we're not paying for it. And that's the most important thing we have to consider.

Senator FOWLER. Let me ask you this, again as a laymen. John Mixon, you'll remember we had hearings on the tax treatment of timber sales in Georgia earlier this year.

I'm going risk a lay definition of sustainability which is simply for purpose of my question to any and all of you, "Planting as many trees as you cut down, as a Nation, hopefully maybe even getting ahead of the curve and planting more trees than you cut down."

We heard at our hearings earlier in Georgia, John, that for the first time in recent history, that we were now cutting more than we were planting and that our forest resource, both as a Federal and private resource, was diminishing.

What should we do about that? Accepting that it's true, I assume you agree with that, that those facts were right. What public policies should we undertake in order to get the cart back on the other side of the horse and get more trees planted for the future than we're cutting down.

Dr. JORDAN. Chief Robinson made the point that one of the problems was the forests were treated badly in the past, therefore, that was an expense and why they were losing money. That argument made no sense to me. If we're losing money we should charge more, we shouldn't charge less. And these below cost timber sales are resulting in charging less, not charging more. So if we can get rid—as a first step—the very first step is to get rid of these below cost timber sales and get more revenue coming in. Then the private foresters will be drawn into the business. Then for a while, as they say, the income will drop, but then it will go back up again and there will be more money coming in the long run to plant seedlings. The Forest Service in the long run will end up with more money, as a result of raising the prices for timber.

Senator FOWLER. Mr. Mixon.

Mr. MIXON. Senator, following up on your statement about our testimony in Georgia, last year we did regenerate an acre for each acre harvested. We planted over 600,000 acres of trees in our State. And with the natural regeneration, we feel like we regenerated an acre, for each acre we harvested.

The loss of capital gains is having an effect on the number of acres we regenerated this year. Our data indicates that we planted

484,000 acres of pine trees this past planting season as compared to 600,000 last year.

The loss of capital gains is changing the bottom line for many of our private timber owners. I own two tracts of timber. And I keep it productive. But the loss of certain incentives today to regenerate, manage, and wait 20 to 40 years before you harvest has really been a blow to a lot of our private landowners.

This is really affecting what's happening. In the State of Georgia, we just completed the U.S. Forest survey. In two-thirds of the State, we're harvesting more pine timber than we're growing. The first time that's ever occurred. So we have to do something differently than we're doing today. We have to get those trees in the ground.

Senator FOWLER. Any others.

Senator GORTON. One followup question on that Mr. Mixon. You're the State forester of Georgia, that's correct?

Mr. MIXON. Yes, sir.

Senator GORTON. The State of Washington has a Washington Forest Management Act, which imposes itself on private timberlands and requires certain practices including regeneration. Is my understanding correct that Georgia has no such act or no such requirements? And if my understanding is correct, why not? Can't you get back to this point, if you simply require certain practices on the part of your private landowners?

Mr. MIXON. Yes, sir. I'm familiar with your Forest Practices Act, that you have in some of your States. I was in California last year, talking to one of the State foresters there and he was telling me that it was costing $25 per thousand for each thousand board foot that they harvested with all the regulations that you've got.

We're hoping that the free enterprise system and the incentives from Federal, State agencies plus private industry can get the regeneration task accomplished without strict regulations.

Senator GORTON. But you want a lot of national tax subsidies for it.

Mr. MIXON. We'd like to have capital gains. We certainly would. It was great, for the whole timber industry in the country. Yes, sir.

Dr. CUBBAGE. Mr. Gorton, one thing that also is very different among the West and the East is the number of landowners and tracts that might be involved. You have very few private landowners in the West, and very many of them are large. The regulation of such, while perhaps being somewhat expensive, is not nearly as onerous as it might be in a State with 250,000 landowners. It would require a program in the neighborhood of hundreds of foresters, which certainly would be a considerable State expense.

Mr. MIXON. Sixty-four percent of our land in our State is privately owned land, whereas your picture is much different.

Senator FOWLER. Well, what I would sure like from all of you as we continue this review, but also we're going to be making some policy decisions. Mr. Robinson said the Federals say that we have 8 million small landowners—58 percent of the timberland in the country growing at less than a 50 percent capacity. And of course you heard him make a plea from the Federal Government for technical assistance for States and landowners, and in Georgia we are very proud of Mr. Mixon's work and the stewardship programs that are in place.

Again, it just seems common sense to me. One of the things that would take the pressure off the public lands is to do a much better job on the private lands.

I'm prejudiced here, because we lost this battle on the Ways and Means Committee in the House a couple of years ago. Trying to tell them that it was penny-wise and pound foolish, at the very least to—I'm lobbying all the people here in the room now—to take the capital gains off the timber. It wasn't right, and it would result in a serious diminution of plantings, which it has in our State and every other State. But CRP is the only thing we really have going now, to encourage the plantings.

With the expertise at the table and others that we're going to hear from, including the people in the industry, we need to know any specific recommendations as to Federal policy that will approach a lay definition of sustainability, common man's definition of sustainability, as well as if we're operating at 50 percent under capacity in our private lands, that sure would be a tremendous help in all these other areas especially the biological problems and wildlife habitat, if we can take the pressure off of a lot of the harvesting unnecessary—what would might become unnecessary harvesting on the Federal lands.

Thank you gentlemen, very, very, much for your participation.

Panel No. 2. Mr. Barry Flamm, chief forester for the Wilderness Society. Ms. Frances A. Hunt of the National Wildlife Federation. Mr. Douglas E. McClelland, Trout Unlimited Advisory Board in Bozeman, Montana.

No Georgians. Lady and gentlemen, if we could try to do it the same way. If you can be as brief as possible so we can have a little discussion. Start off with the chief forester of the Wilderness Society, Mr. Barry Flamm. Welcome, Mr. Flamm.

## STATEMENT OF BARRY R. FLAMM, CHIEF FORESTER FOR THE WILDERNESS SOCIETY, WASHINGTON, DC

Mr. **Flamm**. Thank you, Mr. Chairman. I greatly appreciate this opportunity to talk about the future of American forests and particularly about biological diversity in sustainability.

Senator **Fowler**. Mr. Flamm, let me interrupt you. I run hearings a little differently than some. But I think it's very helpful—I know I'm not giving you much time and you want to get your own points in. But feel free—be encouraged to comment on anything that you've heard before that you want to underline because you agree with it or disagree as we hear from different witnesses, especially the Forest Service since that's our primary responsibility.

### NATIONAL FORESTS ARE OUR COUNTRY'S MOST IMPORTANT RESERVOIR OF BIOLOGICAL DIVERSITY

Mr. **Flamm**. Thank you, Mr. Chairman. I will do that. Foremost, Mr. Chairman, we believe that the national forests—and I am going confine my comments today to the national forests are our country's most important reservoir of biological diversity. However, I recognize the great important of the private forest lands and very much support the stewardship programs that were discussed earlier.

One of the primary and most important goals of national forest management, and foremost, ought to be the conserving biological diversity. Irreplaceable resources on the national forests should be preserved for the future. They must be set aside. There has to be special action taken to protect them for future generation. Renewable resources on the national forest must be managed on a sustainable basis.

### SUSTAINABILITY OF AN ENTIRE FOREST

Here, I might differ from some earlier comments. What I am talking about here in sustainability is sustainability of an entire forest. We're talking about more than just replacing a tree for tree. In order to have sustainable resources for the future, we have to have sustainable forests, sustainable natural resources are a requirement for a sustainable society.

### WE DON'T BELIEVE THAT THE NATIONAL FORESTS ARE BEING MANAGED TODAY ON A SUSTAINABLE BASIS

Unfortunately, we don't believe that the national forests are being managed today on a sustainable basis. I want to cover briefly a couple of reasons why we say that.

The present national forest utilization levels exceeds the carrying capacity.

### CARRYING CAPACITY

Exceeds the carrying capacity, number one, because the areas that are unsuitable for resource utilization are being utilized. Thousands of acres of lands in the national forests are being logged that are unsuitable for logging.

### EXCESSIVE EXTRACTION

Number two, there's excessive extraction. Logging has reached record levels in the last few years on the national forests.

### IMPROPER FOREST PRACTICES ARE BEING USED

Three, improper forest practices are being used. Foremost is the great preponderance of use of clearcutting as a dominant silvicultural practice. This is unnecessary. There are other silvicultural practices that would better achieve objectives.

In addition, the Forest Service is reducing the diversity of forest species through the use of short rotations, plantation forestry, thinning, and use of chemicals. Research has shown that biological diversity and nutrient levels are reduced in tree plantations. And this affects the long term forest productivity and sustainable growth.

### RESOURCES AT RISK

What are the resources at risk? Most importantly, biological diversity itself is at rest. Dr. Simberloff discussed some examples particularly the red-cockaded woodpecker and the spotted owl. There are other problems such as loss of forest songbird habitat throughout the Eastern United States, or concern over—as you know—for the fate of the black bear in the southern Appalachians region. And there are concerns throughout the country. There are very important resources at risk.

Senator **Fowler**. While we've still got Mr. Leonard here, in my best provocative style, what is your analysis of the Forest Service—your response to the Forest Service economic analysis of the low-cost timber sales?

Mr. **Flamm**. Well, you mean, I guess we agree essentially with the number of forests they say are below cost. I think our analysis shows a few more. We do not agree with the amortization period which we think is excessive in terms of roadbuilding. That's a major difference.

Senator **Fowler**. Has there been a diminution in the last 2 or 3 years in roadbuilding in the forest system?

Mr. **Flamm**. It's been pretty steady from the figures I see. The roads accumulate. There's a tremendous mileage of roads within the national forests. It's, of course, an additive amount. We think that the major road system in the national forests are essentially in place, that most areas already have roads that are serving almost all the areas that are suitable for development.

Their own plans show that there are more than adequate numbers of roads for developed recreation activities. What is in shorter supply for the future is land for back country use.

So essentially, we realize that some local roads have to be built for development and for recreation sites and for timber sales, but the major system we think should be declared in place.

[The prepared statement of Mr. Flamm appears at the conclusion of the hearing.]

Senator **Fowler**. Thank you, Mr. Flamm.

Let's bring everybody in here. We welcome Frances Hunt from the National Wildlife Federation.

## STATEMENT OF FRANCES A. HUNT, FORESTRY RESOURCE SPECIALIST, NATIONAL WILDLIFE FEDERATION (NWF), WASHINGTON, DC

Ms. **Hunt**. Thank you, Mr. Chairman. The National Wildlife Federation appreciates the opportunity to testify before you.

### THE NATIONAL FORESTS ARE SPECIAL LANDS

We all realize the national forests are special lands, and the law mandates that they need to be sustainably managed for a multitude of uses and benefits that accrue to all Americans, including those yet unborn.

### DEFINITION OF SUSTAINABILITY

I would like to say that when we're thinking of a definition of sustainability, we do think of one that includes all of the resources on the national forests, not just timber and other commodities, but the fish and the wildlife, and recreational opportunities as well.

Senator **Fowler**. No, I understand that. My questions are not to be interpreted ever. The last of series of questions had to do with my definition of sustainability and only to do with using that example on timber, how do you get more timber grown than we get cut.

Ms. HUNT. I realize that, Senator.

### TENSION AND CONFLICT INHERENT IN SUCH A MANDATE

Anyway, we gave the national forests a very board mandate and we told the Forest Service to manage our national forests for this multitude of uses. It's clear that there's going to be tension and conflict inherent in such a mandate, and tension has long existed between commodity and noncommodity production on our national forests and it became even more apparent in the late 1950's and early 1960's. At that point the Forest Service looked to the concept of multiple-use management to see if there wasn't a way to meet all these many and sometimes conflicting demands. As the Forest Service told Congress in a 1959 report ("Program for the National Forests"), a multiple-use approach could provide "more wood for the Nation," "better hunting and fishing," "more and better water," "more outdoor recreation," and "better range."

Unfortunately, this attempt to produce more of everything everywhere was doomed to failure, it seems, from the very beginning. Timber has remained the prime revenue producer, and multiple-use has come more and more to be used as a way of explaining how to maximize timber production without creating undue effect on other values. I will say that the agency has made notable efforts in recent years to increase the emphasis on noncommodity resources, through such programs as the "Rise to the Future" initiative to improve fisheries, but we're very concerned that their overall emphasis on timber production has not decreased. In fact, it's actually intensified.

### TIMBER PRODUCTION IS THREATENING WILDLIFE HABITAT

I will try to summarize my statement for you. I wanted to point out four areas on our national forests that we think indicate that timber production and the production of other commodities does indeed have the upper hand and is indeed threatening the productivity of wildlife habitat and other noncommodity resources.

### ANCIENT FORESTS

In my prepared statement I have gone into some detail about the ancient forests of the Pacific Northwest, the forests of the Northern Rockies, the national forests in Florida, and national forest ski development as examples of how commodity production and commercial development are increasing concerns.

In the interest of time I just would like to briefly use the Northern Rockies as the example. But first I'd like to point out that we think that at this point, there seems to be no absolute public consensus about how the national forests should be managed or what the mission of the Forest Service is.

### A CHANGE IN ATTITUDE

But what does seem to be clear is that the commodity production vision, which has guided the Forest Service during the last several decades, is no longer seen as acceptable to increasing numbers of Americans. You had pointed out, Mr. Fowler, how urban sprawl has affected our forests and forest values. And indeed it seems that the urban nature of our modern society has encouraged a change in attitudes among many people in how they view national forests. Instead of seeing these forests as valuable, largely for commodity production, we more and more appreciate them for the open space they provide, the associated opportunities for outdoor recreation, trails to hike, fast flowing streams to canoe, places to hunt and fish.

In short, the values which Americans seek from our national forests have changed as our society has changed. And I think it's clear that the Forest Service has been slow to shift its historical vision in light of this changing public perception.

### NATIONAL FOREST MANAGEMENT IN THE NORTHERN ROCKIES

Focusing briefly on the national forests in the Northern Rockies as our one example, I'll point out to you where commercial and commodity development is reducing our ability to sustainably manage other resources. It seems clear that the continued commodity management is very apparent in the Northern Rockies.

In this area we have timber harvest levels that are continuing at record or near record levels despite the fact that we're getting massive problems with both below-cost timber sales, as other witnesses point out, and significant environmental conflicts. Of 13 national forests in the Northern Rockies, 12 spent more on their timber programs than the Government received in return for the sale of the timber—with the region as a whole losing some $22 million.

Now, Mr. Chairman, I'd like to point out that we're not only concerned about the fiscal impacts of these timber sales, but also by the fact that it seems quite often timber sales that lose money are marginal sales, are located in those areas that are, for one reason or another, difficult to harvest and that difficulty leads to undue environmental impact as well. So it's a financial as well as environmental concern that we want to point out about these sales.

[The prepared statement of Ms. Hunt and the attached prepared statement of Jay D. Hair, president of the National Wildlife Federation appear at the conclusion of the hearing.]

Senator **Fowler**. Thank you very, very much, Ms. Hunt.

Mr. Douglas E. McClelland, Trout Unlimited, Inc., Advisory Board from Bozeman, Montana. Welcome, Mr. McClelland.

## STATEMENT OF DOUGLAS E. McCLELLAND, FEDERAL LANDS FISHERIES ISSUES, TASK FORCE COCHAIRMAN, TROUT UNLIMITED, INC., BOZEMAN, MT

Mr. **McClelland**. Thank you, Mr. Chairman. I appreciate the opportunity to share with this subcommittee the significance of the trout and salmon resources on forest lands managed by the U.S. Forest Service.

## OPPORTUNITY TO ELEVATE THE FOCUS ON FISHERIES RESOURCES OF FOREST SERVICE LANDS

From the perspective of Trout Unlimited's 63,000 members, the Senate now has a unique opportunity to elevate the focus on fisheries resources of Forest Service lands. I hope these oversight hearings will lead to an even stronger national effort to conserve one of our most unique renewable, natural resources—our coldwater fisheries.

We've been pleased with Mr. Robinson's initiative, Rise to the Future. In the past fisheries and their watersheds have been degraded by unsound grazing, timbering, and mineral extraction practices. These land uses can be managed compatibly with fisheries. But, if they are not managed in harmony—sediment, temperature elevation, nutrient depletion, non-natural water quality, and change in water flow patterns will continue to degrade our streams.

We need to realize the importance of our natural resources, and I would urge that special attention be given to our streams and lakes on Forest Service lands, as they are the integrating elements of our watersheds.

## NEED

The following statistics are offered to illustrate the popularity of, and the need for, increased fisheries:

There are nearly 60 million anglers in the United States. In 1985 they spent nearly 1 billion days fishing.

Demand for angling is expected to increase by 90 percent by the year 2030.

## OPPORTUNITY: AQUATIC SYSTEMS

The Forest Service lands contain 128,000 miles of streams and 2.2 million acres of lakes, ponds, and reservoirs. Fifty percent of the trout and salmon habitat in the United States is in Forest Service managed waters.

## ECONOMICS

Currently with 46.5 million angler use days of fishing on our national forests, $1.21 billion is spent on angling and angling related activities.

## FOREST SERVICE HAS BEEN A LEADER IN ADDRESSING THE PUBLIC'S FISHING NEEDS

The Forest Service, in recent years, has been a leader in addressing the public's fishing needs. To further commend the Chief on his Rise to the Future program, let me note a few of the last 2 years' accomplishments of the program.

From March 1987 to May 1989 the number of Forest Service fisheries biologists has increased from 112 to 211. The Forest Service fisheries budget has also doubled from fiscal year 1987 to fiscal year 1988.

In fiscal year 1988 the Forest Service's partnership fishery programs received $754,000 from the Federal budget and this amount was matched by $2,173,181 in private sector contributions of money, equipment, and labor, resulting in the completion of over 3,000, close to 4,000, fisheries habitat improvement structures and the improvement of over 2,000 acres of lakes and ponds in 28 States.

Senator FOWLER. Give us your review of the Trout Release Program?

Mr. MCCLELLAND. The Trout Release Program? I'm sorry, Senator, I'm unfamiliar with the program you're referring to.

Senator FOWLER. Why don't we let Mr. Leonard tell you. Where they stocked the trout in some of our forests.

Mr. LEONARD. The Forest Service does not stock. We manage the habitat. We do things to make the stream courses, the lakes more productive.

Senator FOWLER. Who puts the trout in?

Mr. LEONARD. Management of the trout, itself—the setting of seasons and all, is under the jurisdiction of the State government.

Senator FOWLER. Well, we hadn't heard from your 63,000 members in all States? I want to know whether those trout are reproducing or not. You haven't heard? They turned a lot loose. I thought it was the Federal Government, but it turns out it is the State government.

Mr. MCCLELLAND. Now, you see Senator in the State of Montana, it has been the State Department of Fish, Wildlife and Parks policy there for many years not to stock streams so we have very little stocking in that part of the country.

Senator FOWLER. Let me turn it on its head and ask it another way, then. In your opinion, what's the greatest cause of loss of trout habitat in your State, in your region?

Mr. MCCLELLAND. Presently, I would say the greatest threat that we face is drought conditions, which are being alleviated fortunately this year, but caused tremendous damage to our fisheries.

Senator FOWLER. What about man-made causes?

Mr. MCCLELLAND. Well, we are concerned about timber harvesting and roadbuilding and many of the things that we've talked about here today. Grazing, all of those man-made practices represent threats to our fisheries resources.

Senator FOWLER. I'm pleased to hear some praise for the Forest Service.

Mr. MCCLELLAND. It's our impression, and certainly it's my impression as a westerner that the wheels of change sometimes move slowly in our Nation's Capital, and from Trout Unlimited's perspective we see the wheels moving within the Forest Service.

Senator FOWLER. You haven't seen all these Presidents go on television showing you how we pass 18,000-page bills every other day?

Mr. MCCLELLAND. I would just like to say we believe that the wheels of change you see in the Forest Service are moving in the right direction and we're working with them to encourage even more of that with respect to support the fisheries program and protection of the habitat that exists on Forest Service lands.

Senator FOWLER. Thank you, Mr. McClelland.

Lady and gentlemen I'll have to excuse you. Your full testimony will be a part of the record. If I'm going get everybody home for supper time, I've got to bring up the next panel, and I thank you very, very much.

Ms. HUNT. Mr. Chairman, I'd like to submit one thing for the record——

Senator FOWLER. Please.

Ms. HUNT. You raised the question of how the private land management affects public lands and the interaction there. There is an article that states that the timber industry in the Northern Rocky region is liquidating their forests and is putting great pressure on the national forests to increase harvest levels. I wanted to bring that to your attention.

[The prepared statement and attachment of Mr. McClelland appear at the conclusion of the hearing.]

Senator FOWLER. Thank you. Your complete statements, all of you, with supporting documents will be made totally a part of the record. Thank you very much.

Mr. Walt Jarck, Mr. Miles, Mr. Rey and Mr. Rumpf. My personal special thanks for your patience. It's hard not to let folks talk all they want to and I want to get to everybody, so I do thank you very much.

Mr. Walt Jarck, the corporate director of the Forest Resources.

## STATEMENT OF WALTER JARCK, CORPORATE DIRECTOR, FOREST RESOURCES, GEORGIA-PACIFIC CORP., ATLANTA, GA

Mr. JARCK. Mr. Chairman, you made a statement to the previous panel that said that if they had any comments on anything that transpired, at that point——

Senator FOWLER. All right. The rule still goes.

Mr. JARCK. Can I still have that plus my 5 minute talk?

Senator FOWLER. Absolutely. I also forgot the Forest Service behind you, so I'm protecting their interest if they need a rebuttal.

### COMMENTING ON TIMBER IS UNDERPRICED

Mr. JARCK. I was doing flips back there because I wanted to respond to some of the comments that were made and I'd like to have just a minute to talk about the comment that timber is underpriced. I think we need to look at markets. We need to see what's happening on the foreign and global markets as well as what is happening here in the United States.

What we're seeing are the prices on the U.S. Forest Service lands are going up with the fair market values around the country and around the world. We're seeing lot of other countries—we see Chile, we see New Zealand, we see Indonesia, we see Australia, we see Brazil—all poised to start socking wood and timber into our markets. They're waiting for an opportunity, and I think if we don't watch out, we're going to give them that opportunity. So when we talk about underpriced and below-cost sales, we've got to be real careful. I look at the low-cost sales as an investment into the future. I don't think that was brought out today, but we're reinvesting so that we can have better timber coming on.

## OTHER CHANGES THAT CAN BE MADE

And I'm not so sure that there aren't some other changes that can be made. We might build less roads or we might have a lesser standard on Forest Service roads. We don't need two-lane or three-lane roads out there. We might want to eventually tell someone to look at the cost of building a one-lane road or doing something less than what we doing to help the situation come back into balance and the below-cost sale may not be a cost at all.

## SPOTTED OWLS

I'd like to also talk about spotted owls for a minute. Georgia-Pacific owns approximately 700,000 acres on the West Coast, starting in Billingham, Washington (I was hoping the Senator from Washington would still be here). I hope he gets this word. Going from Billingham all the way down to the Sierras in California. It's the exact range of the spotted owl.

We have made some independent studies and we find that we have fantastic populations of spotted owls that are living in forests where we are clearcutting—that is making small clear-cut blocks—where we have second growth, redwood, and second growth Douglas-fir, we see populations increasing with that management.

The Forest Service, 10 years ago, made a study on spotted owls, they counted 800 spotted owls. We're now saying there are between 5,000 and 6,000 owls. I think forestry is doing something right, and we need to get that credit. It's not a downhill situation. We see the owls coming back from the low of 10 years ago.

So I think you need to look at that, and it's not all gloom and doom out there.

Senator Fowler. That's the reason for the hearing. I appreciate it. That's good news. Do you got any estimate of the spotted owl population on the Georgia-Pacific lands?

Mr. Jarck. We know of about 17 pair on one forest that we have. And they are increasing in population.

## IDEA OF TRANSFERRING MORE HARVEST FROM THE FEDERAL LANDS TO PRIVATE LANDS

If you'll give me another moment to talk about this idea of transferring more harvest from the Federal lands to private lands and the reason I don't see that really coming about.

We see a shortage of available timber on the West Coast. And it's almost impossible to transfer—to take those people in those mills, in those communities, and transfer those to the Southeast or the Northeast where there is a better supply of timber. I think that's just not possible, to move those people, to move that industry out of the area and move them to a completely different and very alien locality. On the West Coast on private lands we *are* overcutting.

And one of the reasons we're overcutting is that during the 1940's, during the World War II days, there were a lot of timberlands cut for the war effort. Very little reseeding and very little regeneration effort was made at that time.

That is catching up with us now. There aren't enough trees that should be coming along right now. They're not available. Because of the efforts that took place then in the 1950's and 1960's we have good stocking, we will have a bulge in the timber supply on the West Coast, 10 or 15 years from now. In 10 or 15 years then we should have plenty of timber for expansion. We should then be able to do the things that we're trying to do now. At that time the private sector might be able to take on more of the Federal sectors' harvest. I don't see that happening until after the year 2000, however.

Senator FOWLER. How much of your timber is private timber in your company, using the West Coast, however you define the West Coast, is sold for export?

Mr. JARCK. We're selling some of the better grades for export. I would say that at our Billingham location, we're selling for export probably 15 to 20 percent of our timber. In the other areas, it would be a lot less. Out of the total it would probably be 10 percent exported. Most of it, 90 percent, is used domestically. And that's only because the market is there now. I think if the market were to weaken—since we're in the business to make money—we would reduce exports. That's why we're doing it now.

So now I'd like to go on with my 5 minute statement.

Senator FOWLER. Well, I won't give you a full 5, but do it as quickly as you can.

### THE SOUTH'S TIMBER SITUATION AND I WILL GIVE YOU THE GEORGIA-PACIFIC SPECIFIC VIEWS

Mr. JARCK. All right, sir. I plan this afternoon to discuss the South's timber situation and I will give you the Georgia-Pacific specific views. And these are views that are generally shared, I think, by a preponderance of the industrial forest landowners.

There are other members of this panel that will talk about the West and other parts of the country.

### GEORGIA-PACIFIC IS A NATIONAL CORPORATION

Georgia-Pacific is a national corporation, operating 46 sawmills, 19 plywood plants, 28 pulp and paper mills, 4 OSB panel-type plants, and we have 152 distribution centers. Our forestry operations include approximately 6 million acres of managed timberland, seed orchards, nurseries, and state-of-the art expertise to grow approximately 50 percent of our needs. About 4 million acres are in the South, as are a majority of our plants. We employ 44,000 people. Since the logging, tree planting, road construction and other tasks are contracted, the multiplier effect from seed to lumber, paper and plywood delivered to the consumer is extremely beneficial to many rural economies as well as nationally. Georgia-Pacific's corporate objectives for timber management are threefold: one, to grow timber products of size and quality to optimize production in the wood using plants; two, to make the maximum use of each tree harvested and to make each tree harvested produce maximum cash-flow; and three, to accelerate the growth cycle and increase the volume grown per acre. It is Georgia-Pacific's aim to accomplish these objectives while occurring minimum negative impacts to the environment. All industrial landowners share similar objectives. As an ownership class, industrial forest land is well managed and yields higher volumes of wood-fiber than any of the other ownership classes.

### GROWING AND PURCHASING

I mentioned Georgia-Pacific grows about 50 percent of its timber or fiber needs, and purchases the remaining 50 percent. Some companies own very little land and rely totally on open market purchases. The timber is purchased from the independent private landowners, who, incidentally, own 67 percent of the South's commercial forests. It is this source that makes the South so competitive. Because these landowners have different motivations for growing timber and owning their land, they provide a diverse number and kinds of products from biomass and fuel, to pulpwood chip-n-saw logs, plylogs, sawlogs, hardwood sawlogs, pine needles, fish and game.

Industry provides the markets, these small landowners provide most of the resource, making this system unique and competitive. In fact, the South is the Nation's low cost producer of forest products as a result. We need each other for this to happen.

### WE ARE WITNESSING A LACK OF WILLINGNESS FOR SOME OF THESE LANDOWNERS TO REINVEST IN NEW STANDS OF TREES

Lately, however, we are witnessing a lack of willingness for some of these landowners to reinvest in new stands of trees; many are liquidating. I am also concerned that the 1986 Tax Reform Act is causing even more to not spend any money on restoring their cutover lands. The system was working fairly well and was improving. The 21 million acres of planted forests in the South can attest to this. What we do not need is additional legislation limiting the options landowners have.

### CONCERNED WITH FUTURE SUPPLY

Those of us who are in long-term forest planning in the industry are concerned with future supply. We have sufficient supplies of timber growing at the present time, but our concern is with the next generation of trees that should be germinating or should be planted now. I have a graph that will show that the inventory of pine growing stock in Georgia [Georgia Southern Yellow Pine Growing Stock Volume] has increased between 1953 and 1982. It shows that Georgia has almost doubled the pine growing stock in cubic feet in this 29-year period. Similar studies in other States in the South show similar results. There is also a graph showing Mississippi [Mississippi Southern Yellow Pine Growing Stock Volume]. I didn't have time to do all the South. We could make them available, if you want. That is data that comes from the Forest Service.[2]

Senator **Fowler**. I will have to ask you to wrap up here.

### GOOD FORESTRY IS ALSO GOOD WILDLIFE MANAGEMENT

Mr. **Jarck**. OK. During the recent tax hearings, you held in Macon, Georgia, you specifically asked me about wildlife. I answered that good forestry is also good wildlife management. A regulated stair-step forest with varying age classes offers excellent biological diversity. It offers continual habitat for both game and nongame species. It provides cover and forage for those that favor openings, as well as those that prefer varying types of canopy. Hunters tell us they prefer intensively managed company lands because of the greater game populations that are sustained over a longer period of time.

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[2] See pp. 125 and 126 for the graphs.

### ENCOURAGEMENT NEEDED IN DIFFERENT AREAS

I urge you and your colleagues to work toward providing southern landowners with the level playing field to encourage timber management to sustain the jobs, local mill economies, clean air and water, and wildlife that these forests provide. Do not write laws that encumber good management or good decisionmaking on these lands. Encourage the elimination of such counterproductive moves as the Tax Reform Passive-Active Loss rules which are turning off many tree farmers. Encourage educational programs and technology transfers to get the word out on better management practices and the financial benefits of regenerating and timber stand improvement practices. I ask you to work with us to keep us competitive on both the domestic and world markets. By sending signals that encourage investment for good forestry you will assure that southern timber growers will have excellent markets for their timber products, the industry will have sufficient future timber supplies, and the public can enjoy the recreational and intrinsic values that come from multiple-use.

[The prepared statement and graphs of Mr. Jarck appear at the conclusion of the hearing.]

Senator FOWLER. Thank you very much, Mr. Jarck.

Mr. Bruce Miles, the president-elect for the Forest Farmers Association from Texas A. & M. University, College Station, Texas. Welcome, Brother Miles.

## STATEMENT OF BRUCE R. MILES, STATE FORESTER OF TEXAS, DIRECTOR, TEXAS FOREST SERVICE, PRESIDENT-ELECT, FOREST FARMERS ASSOCIATION, TEXAS A. & M. UNIVERSITY, COLLEGE STATION, TX

Mr. MILES. Yes, sir. Thank you sir.

I'm testifying as president-elect of the Forest Farmers Association which, as you know, Senator, is headquartered in Atlanta, Georgia. Some 3,000 members representing private forest landowners across the 13 Southern States. I am also referring to some information that I have as State Forester and Director of the Texas Forest Service.

### TIMBER DESERVES CAPITAL GAINS

In the few minutes I have, capital gains has already been discussed. I think if there is an investment that deserves capital gains treatment, it is timber.

### PASSIVE ACTIVITY LOST

The passive activity lost is another issue that has been well documented today, and I will leave my written statement with respect to those two issues.

Senator **Fowler**. Let me interrupt you, since you are preaching to the choir here. I have introduced legislation, as you know to restore the capital gains treatment for the reasons that we have discussed today, and any help you can give me from your association, professional delegations mentioned here, will be a tremendous help. It will be a tremendous help to the whole effort of growing some trees.

Mr. **Miles**. Well, thanks, sir, we have distributed that information, that your office has, to our membership as well as others.

Senator **Fowler**. Well, if you need anymore just let me know.

Mr. **Miles**. Yes, sir.

Senator **Fowler**. Go ahead, Mr. Miles.

### PROTECTION FROM THE SOUTHERN PINE BEETLE

Mr. **Miles**. There are a couple of other issues that had not been discussed. One is the private landowners of the South do need some protection from the southern pine beetle epidemics that have in many cases originated on Federal wilderness areas. Southern pine beetles are again active in Texas, Georgia, and several other States.

In 1985, we had on the Four Notch proposed wilderness area, a 4,000 acre part of the Sam Houston National Forest suffered a major infestation of the southern pine beetle that destroyed some 4,000 acres and some $4 million worth of Federal timber. That in itself is tragic. The fact that hundreds of infestations came off of that spot onto adjacent private landowners, as one private landowner said, that is criminal.

### TIMBER VALUE DROP

In addition to those additional infestations, we had the timber value drop from $150 a thousand board feet, in that immediate area, to $5 to $7 per thousand board feet, and landowners could not sell their timber because of the flood of southern pine beetle timber that was on the market. That again is a major concern to private landowners that have timber around wilderness areas where southern pine beetle is not being controlled or is being let go until it is beyond control very quickly. Now, in 1989, again in Texas we have more southern pine beetle on wilderness areas in the State and we are concerned about that.

### LANDOWNERS ARE ALSO CONCERNED ABOUT THE ENDANGERED SPECIES ACT

Landowners are also concerned about the Endangered Species Act. The case in Texas is well documented. And it is now impacting 14 national forests across the South, and this is not just a national forest issue.

Last week I looked at a $400,000 timber sale on the State forest in my State. We had to cut that sale in half—$200,000 lost in order to protect the bird habitat. We believe in protecting the endangered species, but we also had to lay off 10 employees. I'm sorry again, that Senator Gorton is not here, simply because we do not have the funding to continue to employ 10 of our Forest Service people without having those timber sales.

The national forests, contrary to the statement of a previous speaker, does have a lot of bird habitat in loblolly pine in Texas, and that's what mostly is involved in the red-cockaded woodpecker habitat.

Senator **Fowler**. Yes, the woodpecker case, that was the Federal District Court in Texas, wasn't it?

Mr. **Miles**. That's correct.

### PRIVATE PROPERTY RIGHTS IN LIGHT OF MORE WILDERNESS

The other issue that I want to briefly discuss involves private property rights in light of more wilderness. It is becoming more and more of a growing concern. One of our Tennessee members has lost the rights to use his property for scenic river use. He has just recently been paid for that after years of mitigation. The Big Thicket in Texas had some 84,000 acres in 1970 designated as a preserve. It took years for many landowners to get their payment for that, and now there is legislation being considered for an additional 14,000 acres to add to the Big Thicket preserve. And of concern to many landowners is whether they are going to lose their private property rights. Inasmuch as we have close to 90 million acres of wilderness in the country now, just how much is enough? Private landowners are affected as well as the national forest.

And with those brief remarks about those three issues I'll be glad to conclude and answer any questions.

[The prepared statement of Mr. Miles appears at the conclusion of the hearing.]

Senator **Fowler**. Mr. Miles, thank you. I know the Forest Farmers have done a very good job in promoting traditional good forestry practices. I've seen that with my own eyes. What are you doing, or has been done, to encourage the management of wildlife habitat and environmental concerns in your promotions?

Mr. **Miles**. Well, my colleague from Georgia, John Mixon, addressed that very well relative to the Stewardship Program. Alabama has a Treasure Forest Program that the Southern State forestries are considering moving across the South through the Stewardship Program so that——

Senator **Fowler**. So you all are tied into that?

Mr. **Miles**. That's correct.

Senator **Fowler**. Good.

Well, let me bring Mr. Rey in here and then we'll have to question the whole panel.

Mr. Mark Rey, vice president of public forestry programs, for the National Forest Products Association.

### STATEMENT OF MARK E. REY, VICE PRESIDENT, PUBLIC TIMBER PROGRAMS, NATIONAL FOREST PRODUCTS ASSOCIATION, WASHINGTON, DC

Mr. **Rey**. Thank you, Mr. Chairman. I represent the Public Timber Council of the National Forest Products Association. That means companies that are dependent on the national forests for their raw material supply. Therefore, I guess my function on this panel is to respond to any questions you have about all the bad things the Forest Service has been doing, based on what you've heard so far.

I will be brief.

Senator FOWLER. We've heard a lot of good things too.

Mr. REY. I will be brief. I hope you have lots of questions and I'll try to leave as little on the table as possible. But just so you don't think that we agree with the Forest Service in every instance, there's one matter on which we disagree with them very significantly, that I'd like to talk to you about in the course of today's hearing.

I appreciate the hearing because I think it's a good beginning point in what we hope will be a series of oversight hearings on problems associated with the management of the National Forest System.

### ALL OF US HAVE A DIFFERENT PERSPECTIVE OF THE WORLD

One thing you'll soon find from the hearings is that all of us have a different perspective of the world. In my perspective of the world, it is that in light of the fact that we're currently in a sustained period of unprecedented demand for solid wood products, both here and abroad, the Forest Service timber sale program hasn't even come close to keeping pace with harvest levels of timber already sold exceeding sales each year since 1984. This has brought volume under contract down to an historically low level, with the Forest Service falling behind. At the same time the preparation of new sales, for reasons indicated in my prepared testimony, resulted in for the agency missing even its appropriated sales targets in some regions.

This situation, which is dire to begin with, has been exacerbated by the appeals and litigation which we've discussed. Those to be discussed today are examples of a larger problem. That problem being the appeals and litigation of Forest Service timber sales have increased at a rate of excess of 100 percent per year, for each of the last 6 years. That's resulted——

Senator FOWLER. I don't understand that. At a 100 percent of the rate of excess——

Mr. REY. The number of appeals has doubled each of the last 6 years on the average of Forest Service timber sales.

Senator FOWLER. Appeals from court decisions?

Mr. REY. Administrative appeals to the agency, court actions before the court. That's resulted in the economic dislocations described in my prepared testimony, the composite of that has. And has resulted in 30 mills in the five Western States from Montana through California closing their doors since the middle of last year.

### WE URGE YOU TO LOOK INTO THE TIMBER SALES PREPARATION PROBLEMS

We urge you to look into the timber sales preparation problems, and there is a funding problem as well as a problems over the procedures that were used in the appeals process. The agency has made some inroads in the latter area, but I think it's gone as far as they can. And they are going to need your help in going in further.

### CONSIDERABLE DOUBT ON WHETHER THE FOREST PLANS CAN ACTUALLY BE IMPLEMENTED IN A SITE-SPECIFIC FASHION

Beyond that, I'm not much more optimistic about the mid-term that we face. I think recent events in forest planning area cast considerable doubt on whether the forest plans can actually be implemented in a site-specific fashion. And whether given recent court decisions, and interpretations of the procedural requirements of the National Environmental Policy Act, the agency has the manpower and the funding to do the different layers of environmental analysis necessary to offer timber for sale.

What you need to realize, Mr. Chairman, is at the present time it takes four EIS's to offer a timber sale. There's an EIS on national planning program, an EIS on the regional guides for each region of the country, an EIS on each forest plan, and now the agency's being compelled to write environmental impact statements on individual timber sales and with greater frequency of cases.

You can't run the railroad that way. And that's one of the reasons that the profitability of the program is being encumbered. That's the end of my prepared statement.

I guess I'd like to respond to two things I've heard. One, the one I just mentioned, which is profitability, and the second of the issues is sustainability, and with the remaining time I'd like to take up that one issue I have with the agency.

### PROFITABILITY

In terms of profitability, I'd have to respectfully disagree with the statement which you made, which is the law doesn't compel the agency to lose money. In fact, the laws we've passed have imposed upon the agency obligations which cost money.

In almost every instance, industrial landowners manage land similar to, often adjacent to the national forest at a profit. I'm not saying that those values and those laws are wrong, or that they ought to be changed. But that's a good part of the problem regarding the possibility. Even though the sale program as a whole is profitable.

We've reviewed the TSPIRS system. We have our own views as to areas where we think that the profitability, the sale program has been underestimated, because of the methodology being used. One is the cost of administrative appeals, and I'll submit that for the record.

### SUSTAINABILITY

Second issue, I'd like to address if I could walk away, the issue of sustainability. Because we've heard several definitions of sustainability. I'd like to use this bar chart to give you our basis of comparison. This is what the Forest Service has sold through fiscal year 1978 through fiscal year 1988. They sold a little bit. They'll probably sell substantially less in fiscal year 1989, as a result of the administrative appeals. Under their old plans, the ones that are being replaced now. This is what they said the forest could produce under all the environmental, natural resource control requirements that were placed on it at that time.

Under the new plans, they said they could produce this much. Still more than any of those bars right there. The long-term sustained yield in those plans, which is what the bars can produce, recognizing multiple-use values, but not all the discretionary decisions to maximize other resources, it is far access to that. The difference between here and here, is the difference between maximizing output wildlife or other recreation values. But the important thing I want you to understand, as you look at these columns—this one we are still arguing about, because many of the plans are draft, both of these columns are higher than what has been sold over the past 10 years.

## RED-COCKADED WOODPECKER

Now to the point or area where we disagreed—it was one issue that was mentioned earlier today, and it was the red-cockaded woodpecker. The agency is currently struggling with whether they need to do more for the red-cockaded woodpecker than is included in the Forest Plans that are final in the 14 Southern States.

They are under threat of litigation by the Sierra Club, notwithstanding the fact that the Sierra Club wasn't a party to the development of those final forest plans. They are final, we should be operating under them. If there is new information, we petition the agency to amend the plan—that seems reasonable.

The agency has embarked on a course of unilaterally changing the plans, of course, which we were forced to bring our appeal to. The appeal was remanded back to the regional forester, and they are doing additional work, and, as I understand it, on Monday they are going to reissue the same memorandum.

We don't dispute the agency's authority under the contract clause to modify existing contracts, the ones that they have already sold to us, that we own, and they have removed over 40 million feet of timber from those contracts, from people who were the timber sale owners, and that has been done without our objection.

## WE DO OBJECT TO NOT IMPLEMENTING THE PLANS

We do object to not implementing the plans unless we go through a process to say why they've been changed. And so if the agency issues that document on Monday, we are going to have to appeal it again.

We have met with the agency, the Sierra Club so far has been unwilling to sit down. To their credit, Audubon and the Wildlife Federation have been willing to sit down, and met with us on Friday.

Our preference would be to see the agency not go forward unilaterally with something we are just going to have to file another administrative appeal on, but to continue to discuss the development of some interim guidelines, hopefully based on a consensus process, that will carry us from where we are not to wherever we have to be, based on the biology of the red-cockaded woodpecker.

I would hope that we might engage in discussions later today to make that possible.

Thank you very much. I have gone over my time, and I will stop right now.

[The prepared statement of Mr. Rey appears at the conclusion of the hearing.]

Senator FOWLER. Well, you did it in the best lobbyist tradition, by saying you were going under, and then going over. [Laughter.]

But you had my full attention, and it was a very succinct presentation.

Let me ask you this, Mr. Rey, if you will excuse me, Mr. Rumpf——

Mr. RUMPF. Sure.

Senator FOWLER [continuing]. Before I forget it, and then we will move.

Going back to Mr. Jarck's comment, that, in some parts of the country—specifically the West, I think Mr. Jarck was saying—that the supply of private timber cannot currently meet the demand, therefore, in some way anyway, that increases the pressure for the cuttings on the national forests.

From your view, and those of your clients, can the national forests sustain the harvest rates required to fill the demand for commodity and noncommodity use until the private lands are again ready for harvest?

Mr. REY. I am going to refer that, and that is why I wanted to pass it on to you. Our view is they can, if we make sensible land allocation decisions, designed to bring us into a rotation that is in harmony.

The land allocations of the forests in the Pacific Northwest, where the problem is most severe, are before you now. What you see is that part of the forest that is incapable of sustaining forest production, that part that has been set aside by wilderness, that part that is called "no-use," as a result of discretionary decisions, done by the Forest Service in the development of the forest plans, to maximize some other resource values.

Senator FOWLER. You mean, no harvests?

Mr. REY. That is correct. That part, which the Forest Service set aside for the owl, that is the 3 percent sliver, and that part which the courts currently have tied up, if you extrapolated the effect of the current court injunctions that are causing so much trouble in the Pacific Northwest.

Senator FOWLER. Yes.

Mr. REY. What you have left is 25 percent of the forests, and that includes the area that is already cut over.

I would hope that we could be able to take the parts that are available, maybe even revisiting some of the wilderness areas, and fashion a mechanism of protecting the owl, in whatever old-growth resources are truly ecologically significant, in the view of the participants of the current debate, and still sustain something roughly equivalent to what the harvest program has been for about the past 10 to 12 years.

Senator FOWLER. Well, let me ask you the question that I also asked Mr. Jarck, and I was just asking him about his company specifically.

What is—because it is one of the first questions you will be asked, and then we will have to move on—how much of the whole-log timber cut for the national forests goes into the export market as whole logs?

Mr. REY. None at all. Not one stick.

Senator FOWLER. Where does it go?

Mr. REY. It goes into domestic mills for processing. You cannot export Forest Service timber.

Senator FOWLER. Is that by law?

Mr. REY. That is by law. And we think that when we look at the export market, what we are looking at is a market that is increasingly becoming one of export of finished products. Log exports are decreasing right now, and lumber, plywood, particle board and pulp and paper exports are increasing.

The market for the Pacific Northwest's finished wood products is—I think the future market is the Pacific Rim, where they can be premiere suppliers.

Mr. Jarck talked about other countries. I think when we look at what we do with the national forests, we have to step back at least one step, occasionally, and look at the global situation.

The market for our products, whether it is lumber or pulp and paper, cycles in world markets. If you remove 25 or 50 percent of the national forest timber sale program, which is what the Wilderness Society has in the past stated would be a fair solution to this, that material is going to come from some place else, and that amount of material isn't going to come from the Southeastern United States—they don't have the capability of supplying that much.

It is going to come, depending on the nature of it, from places like Chile, Kalimantan in Indonesia, Malaysia,[3] the Amazon Basin, possibly the Soviet Union, if they develop their infrastructure, probably not Canada for much longer, because they are working their way through their raw material supply source.

You have to ask whether, given that we have fertile, temperate zone soils, the most advanced system of scientific silviculture on the globe, and in the national forests, putatively the strictest environmental control requirements anywhere in the world, whether you want that material to come out of the Amazon Basin, or whether you want it to come from the national forests.

Because half of the national forests timber sale program, in gross quantities, is the equivalent of the roundwood material coming out of the Amazon Basin every year, and it isn't coming out under any multiple-use, Sustained Yield Act, national forest plans, Endangered Species Act, MEPA, or any of the other environmental control requirements that we operate under.

It is coming out the hard way, and in some cases, it is a permanent withdrawal, because those lands aren't ever going to grow timber like that again.

Senator FOWLER. Well, you will have some observations on that in a minute from our last—penultimate witness—not Mr. Rumpf, but the one who comes after that.

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[3] Kalimantan, southern part of the island of Borneo, belonging to Indonesia: 208,286 sq. mi. (539,460 sq. km); population 6,723,000; chief city, Banjermasin.

Mr. Rumpf, you have been very patient. Mr. Bob Rumpf, vice president of the Glatfelter Pulp Wood Company, Spring Grove, Pennsylvania.

Welcome.

## STATEMENT OF ROBERT RUMPF, VICE PRESIDENT AND GENERAL MANAGER, THE GLATFELTER PULP WOOD CO., SPRING GROVE, PA

Mr. **Rumpf**. Thank you, Mr. Chairman.

I am here today representing both my company and the American Forest Council.

### INTRODUCTION

Our company, the Glatfelter Pulp Wood Company, is the forestry or wood supply subsidiary of the P.H. Glatfelter Company, and we are the leading manufacturer of book publishing paper in the country. We own about 107,000 acres of forest land.

We have heard a lot here today about the national forests. We are located in an area where we operate in Maryland, Delaware, Virginia, and Pennsylvania. We are not close to any national forests, we receive none of our timber supply from national forests.

### IMMEDIATE TIMBER SUPPLY CRISIS

The United States currently faces an immediate timber supply crisis. This crisis clearly is not for lack of natural resources, but rather induced by national and regional policy disputes, leading to the withdrawal of productive forest lands.

Recent predictions made by the U.S. Forest Service in the 1989 RPA Assessment clearly show a substantial increase in demand for all resources derived from the forest over the next 50 years. Supplying this demand in an environmentally sound manner is possible and essential.

The Government, public forest lands, and both industrial and nonindustrial private forest lands have interdependent roles in meeting this demand. Those involved in planning for future demand should be cautious not to broadly categorize forest land ownership classes for the supply of certain forest resources.

### THE UNITED STATES CLEARLY HAS THE ABILITY TO SUBSTANTIALLY INCREASE ITS PRODUCTION OF BOTH COMMODITY AND NONCOMMODITY FOREST RESOURCES

According to the 1989 RPA Assessment the United States currently grows 31 percent more timber than is harvested, burned, destroyed by insects, or otherwise consumed each year on the "harvestable" forest lands. Add to this a potential 17 percent increase in timber growth nationally if all nonindustrial private forest land owners would implement financially viable improved forestry techniques. Finally, add in the full productive potential of public lands. Our forest lands clearly have the potential to meet the public's increasing demand for wood products.

### PROPER TIMBER MANAGEMENT CAN MAINTAIN OR ENHANCE OTHER FOREST RESOURCES

The American tree farm system is testimony as to how proper timber management can maintain or enhance other forest resources. As you probably know, Mr. Chairman, the State of Georgia is number one in the Nation in tree farm acreage.

Senator FOWLER. And proudly so.

Mr. RUMPF. Yes, sir. Preservation groups and the RPA Assessment document lead the public to believe that many forms of recreation, critical wildlife habitats, and cultural resources are only protected or enhanced on public lands. In addition, the Assessment illustrates how, in theory, the future increased demand for timber products can be supplied from private forest lands. This promotes the public attitude that national forests and other public lands should be allocated more for recreation, wildlife, and cultural resources and less for the full assortment of multiple uses.

Private forest land owners have clearly demonstrated their ability to produce noncommodity resources while meeting their commodity resource objectives.

### OUR ABILITY OR INABILITY TO ACHIEVE HIGHER LEVELS OF FOREST PRODUCTION WILL HAVE A DIRECT IMPACT ON OUR NATIONAL ECONOMY, OUR INTERNATIONAL COMPETITIVENESS, AND THE HEALTH OF THE GLOBAL ENVIRONMENT

The forest products industry today employs more than 1.4 million men and women in all 50 States and each year ships products valued at approximately $190 billion.

The forest products industry is comprised of several diverse but interdependent sectors. It consists of large manufacturing plants, small family owned sawmills, and 4.5 million individual woodlot owners, who furnish companies with much of the commercial-quality timber used in the manufacturing process. Also, timber supplied from public lands is important to the industry in all regions of the country.

Funding for forestry research significantly lags behind agriculture. Programs such as the McIntire-Stennis Forestry Research Act and the Competitive Forestry Research Grants need additional support.

The ability to maintain our high levels of forest resource production will have a direct effect on our national economy and international competitiveness. The United States has the most environmentally sound forest management practices in the world. We can have a positive effect on the global environment by increasing our share of the supply of forest products to the world.

### POLICY

U.S. policy should be conducive to maintaining a productive and unencumbered forest land base. Some major issues include:

Good forest management is compatible with wetlands protection. There has been a lot of talk here today about withdrawal of national forest lands. Those of us who are trying to supply a mill along the strip city of the East—the crowded East—are facing major problems with completely unrealistic regulations requiring wetland protection.

[The prepared statement of Mr. Rumpf appears at the conclusion of the hearing.]

Senator **Fowler**. Mr. Rumpf, let me interrupt you, because I have read your prepared testimony.

Mr. **Rumpf**. Yes.

Senator **Fowler**. And you mention that good silvicultural management is compatible with wetlands protection. As you may know—though there is no reason for you to know—I have authored a provision trying to support and have a net gain in wetlands.

The President has announced a "no-net-loss" in wetlands. I think we ought to do better than that, and try to have a policy that gains.

Do you think the forest industry would be supportive of such a policy, and be willing to help in the management of newly restored wetlands?

Mr. **Rumpf**. Our position——

Senator **Fowler**. Or, if not, what incentives would you need to get you to help?

Mr. **Rumpf**. Under section 404 of the Clean Water Act, silvicultural activities receive an exemption from the permitting process. The National Wetlands Forum, which was hosted by the Conservation Foundation, Governor Keene of New Jersey was the chairman, strongly recommended—and it included a lot of groups from different interests—strongly recommended the continuation of the silvicultural exemption in the wetlands bill.

We feel that this is important. It does not mean, though, that the forest industry is not interested in protection of wetlands.

We feel that by following best management practices, which we are doing now in our company, and strongly advocating among all the wood suppliers that come into our mills, the adoption of best management practices, that we can protect wetlands, and still provide our mills with the needed supply, without unnecessary costs and time delays that extensive permitting processes would involve.

So, we have no problem with what you are trying to do, we are for that.

Senator **Fowler**. I am not trying to put you on the spot, and make any corporate decision, or association decision, now. What we are trying to do, just so you will know, by sharing information here, is trying to figure out a way to have what amounts to a permanent easement on wetlands, land that we determine should not be cut or cropped.

We still want to retain private ownership. The landowner would be able to hunt it and fish it, he would be able to say who could go on it, and who couldn't go on it to hunt or fish.

Mr. **Jarck**. Would you let us continue our forest practices, and do——

Senator **Fowler**. Well, no, we wouldn't let them cut.

Mr. **Rumpf**. How do you define wetlands? And I think it might be a situation, if somebody from Georgia——

Senator **Fowler**. I don't know if I can define it, but I can show you what it is.

Mr. **Rumpf**. And somebody from Georgia, and somebody from New Jersey, or the Strip City of the crowded Northeast, defines them completely differently. It is a matter of perception that is the problem.

To give you an example, we are harvesting a tract of timber on a State forest in Pennsylvania, and in the development process, some of the people from the regulatory agency, that are going to administer these proposed regulations, came out, and the one individual was defining wetlands strictly on the basis of species.

He found a red maple half-way up the side of a ridge, and he said, "That is a water-loving species, that is a wetland." And he firmly felt that he was right.

Senator **Fowler**. Well, I know that there are those——

Mr. **Rumpf**. And these are the problems that we see in implementing——

Senator **Fowler**. Well, I don't think they are problems that can't be overcome.

Mr. **Rumpf**. If I could——

Senator **Fowler**. I think common sense can determine what is a wet spot, like they have in North and South Dakota, and what is a wetland.

But, see, if we are at all serious, and we have heard a lot of testimony today. I mean, I have read your testimony, about encouraging wildlife habitat and environmental practices on the private lands, especially those of you who are the big operators.

But one way to do that is to have agreement on what parts of private lands ought not to be cut, rather than looking at the whole area. Have an agreement, by some kind of commonly reached agreement or definition, as to those lands that obviously do provide—they are wetlands, they are the primary animal, waterfowl and water-oriented habitat.

They are necessary for a water purification system for the farmers' lands, and all the other environmentally necessary things, and they ought not to be cut, and they ought not to be cropped.

It seems like to me that's a reasonable basis to begin a discussion.

Mr. **Rey**. Can we visit with you?

Mr. **Jarck**. Can I make a comment?

Senator **Fowler**. Yes, of course.

Mr. **Jarck**. One of the reasons you have these wetlands—and we are talking about forested wetlands, not the savannahs, and not the coastal wetlands that some people look at as wetlands—these are upland wetlands—one of the reasons you still have wetlands is because, for the most part, we have been practicing forestry on those, and you can cut and not really affect the wetlands condition.

That doesn't really change anything. It changes the vegetation for a while, but that vegetation——

Senator **Fowler**. That is selective cutting.

Mr. **Jarck**. Well——

Mr. **Rey**. Not necessarily. It could be any kind of cutting.

Mr. **Jarck**. Well, you cut differently for different species, and in some cases you might want to make small clear-cuts, in other places you might want to do some selection, or selective cuts.

But the reason you have those wetlands in Georgia and in the Southeast is because we have been practicing forestry on those lands. These have not been converted to agricultural lands, or they are not converted to development lands or for other kinds of uses.

Senator FOWLER. Well, again, we will have to stop here. I am going to make all of you keep your place.

Mr. JARCK. I would like to complete——

Senator FOWLER. No, but there are some of those, but there are also ones that have never been cut.

Mr. REY. Very few.

Senator FOWLER. Pardon me?

Mr. REY. Very few.

Senator FOWLER. Well, very few by some standards.

Mr. REY. Most of the cypress, tupelo gum type, which are the wettest forested wetlands, are in second or third growth——

Senator FOWLER. You see, I have 300 acres out here, and it is mostly swampland, and it has all these cypresses in there, and all these old hardwoods. It may have been cut somewhere along the line, but it hasn't been cut in 30 or 40 years.

Mr. REY. Right.

Senator FOWLER. You probably have 27 different species of birds, at a minimum.

Mr. REY. Right.

Senator FOWLER. You have all the egrets nesting there. You have a few alligators—now, those have come back well—but you think you have problems now on the national land, what if—I mean, how are you going to cut there and still make people convinced that you are going to protect wildlife habitat?

Mr. REY. The predicate for exempting forestry activities from the wetland permit requirements was that you could do that, that over time—in fact, I guess I was mostly involved in working on that set of regulations.

The way we were able to convince the Environmental Protection Agency that forestry was a valid use of wetland forested areas, is we showed them aerial photographs of mixed cypress, loblolly pine sites, extending over 40 years of management, with entries—that is, harvests—in those areas, in both the cypress and the loblolly pine, over the period of that time, then showed them that these stands of cypress were still intact, still there, and still functioning to provide many or most or all of the same biotic values——

Senator FOWLER. That is selective forestry.

Mr. REY. No, those were clearcuts, in both cases. Pond cypress and loblolly pine are both harvested by clearcuts.

In the deeper, tupelo, bald cypress types, selective harvesting has always been the technique in any event. In the second bottoms, the black gum, the water willow oak types, small patch clearcuts have always been the preferred silvicultural technique, and those areas come back through natural sprouting to those hardwood types.

Senator FOWLER. All right, well, let me ask you this. What would be the incentives necessary to increase private wildlife environmental management techniques, or make them a higher priority?

Mr. REY. The single biggest threat to Southern forested wetlands is conversion to agricultural production, to soybeans, primarily.

If you provided, through your mechanism that you are considering, an easement that kept those areas in forest production, rather than conversion to agriculture, that would be, I think, the biggest thing that you could do to promote wetlands habitat development in the Southeast, particularly in the Delta, and in the lower Mississippi Valley, but to a lesser extent, in the large river systems in your State, and along the Atlantic coast, as well.

But I think the key is to provide for some economic use of the land that is compatible, and at the same time trying to discourage conversion to economic uses that are more profitable—you can sure make a lot more money growing soybeans than you can bottomland hardwoods—but less amenable to the values that you want to promote.

I would make a sharp distinction between forestry and farming in that case, not because I dislike farming—I think that that is an inappropriate land use—but for the objective I think I hear you trying to achieve, I would say the best way to get there is to encourage forestry as the preferred land application there, and try to keep those areas in hardwoods, and out of soybeans.

Mr. RUMPF. Let me say something, too. You know, I think I have heard this a number of times here today, that we are into either/or situations. In your mind we either protect the wetland or we clearcut it. There is no harvesting and protecting at the same time.

And our point is that that is possible.

Senator FOWLER. Well, Mr. Rey is the one that just said that you clearcut them.

Mr. REY. On certain types.

Mr. RUMPF. That is possible. Harvesting———

Senator FOWLER. How much of that land in the 30 years that it takes them to grow them back?

Mr. RUMPF. You know, the other thing, here somewhat earlier———

Senator FOWLER. The adjoining agricultural land? What that does to the water system? What that does to erosion? And that is the question. We can all categorize, and I am not trying to do that, I am trying to solve the problem.

Certainly if you can do some things that may be best for timber but it would have a serious effect on adjacent agricultural land.

You can do some things that might be best for agriculture, and might have a serious effect on the timber industry.

But we have the same competing uses between those two as you do in all the other things we have been discussing today, on any forest lands, private and public, if we are trying to make them genuinely multiple-use.

Now, that is not necessarily your job. I am not trying go make that your job. Nothing in the law requires you to have wildlife habitat management on your private lands. But I also make the suggestion that since you see, just because you have had to sit here for 3 hours, the difficulties of the decisions that we have to make, with a genuine concern that doesn't just come out of the top of our heads, sitting up here.

You know, we listen to hundreds of people every day, and get 6,000 letters a week.

It is just that we are trying to figure out a way that the forest industry can help us lead on some of these public policy requests, that when the public doesn't respond to them, lead to lawsuits, and then sort of back up into the forest and timber industry, and forest products industry.

Mr. RUMPF. Could I make a suggestion?

I don't know if you are a part of the Washington crowd that heads for the Eastern Shore some weekends, but if some weekend——

Senator FOWLER. I would be, but I am afraid not.

Mr. RUMPF. Well, if you would like to leave early, we have timberland on the Eastern Shore. We would be glad to take you on a tour, and show you some of the practices that are going on.

We can look at them on the ground, and I think we can probably answer a lot more questions in that way than sitting here talking about the problems.

Senator FOWLER. I will remember that, Mr. Rumpf, and I might be able to take advantage of it some time.

Mr. REY. That is, parenthetically, precisely the way we convinced the Environmental Protection Agency that forestry was a compatible use.

I mean, we can sit here and talk about it at length, but it is hard to visualize sometimes. I think we can show you what happens after a site is harvested 1 year, 2 years, 5 years, 20 years.

You can, I think, judge with your own eyes whether the wildlife habitat is being protected in that context, and this is an issue, in many cases, where beyond a point your eyes, I think, will tell you a lot more than your ears. That has, at least, been our experience.

Senator FOWLER. Thank you, gentlemen, very, very much.

And that goes for the last panel, too. I would love to have your specific suggestions following up on anything that we have discussed here today.

Mr. REY. I would like to follow up with your staff on that one problem we discussed.

Senator FOWLER. You may do that.

The last two gentlemen, Mr. Edward Goldsmith, and Mr. Karl A. Ziegler, of Ziegler Associates, in London.

Senator FOWLER. Mr. Goldsmith is the editor of the Ecologist magazine, published in England, and has a long-term reputation, both in publishing and the quality of his writings on ecology and our environment.

Mr. Ziegler is a consultant from England and Kenya, who is also working right now on the question of a debts for nature program that might be workable in saving some of the tropical forests.

I have heard Mr. Goldsmith lecture before, and both of these gentlemen I have asked to talk about the tropical rain forests, and our country's plans to come up with a plan in conjunction with others, but before you get into that, Mr. Goldsmith, I would like very much to hear any of your reactions to what you have heard today, and your thoughts on the overall question of our forest policy.

Mr. GOLDSMITH. Can I give my thoughts within the context of what I am going to say?

Senator **Fowler**. Absolutely. Pull the microphone down a little bit, and I heard somebody admonish you in England one time to try to talk slowly, so I will do that also.

## STATEMENT OF EDWARD GOLDSMITH, EDITOR OF THE ECOLOGIST, DOSSET, ENGLAND

Mr. **Goldsmith**. Well, as Senator Fowler said, I am concerned with the destruction of the world rain forests. We published a plan to save the world rain forests in this paper, the Ecologist, which I publish, which has been taken up by the World Rain Forest Movement, which is based in Penang, Malaysia, and is a large organization of Third World NGO's, mainly Asian.

Well, we are presenting this plan, with a large number of signatures—3 to 4 million signatures—in New York on September 19 of this year, when we are going to request an Extraordinary General Meeting of the United Nations to discuss the plan.

### TO IMPLEMENT THE PLAN REQUIRES COOPERATION

To implement this plan, of course, requires considerable cooperation from the U.S. Government and legislature, which explains, perhaps, why I am here today.

### PROBLEM OF FOREST DESTRUCTION WITHIN THE CONTEXT OF GLOBAL ENVIRONMENTAL DESTRUCTION

First of all, to explain why such an initiative is so necessary, I think I have to look at this problem of forest destruction within the context of global environmental destruction. I don't think you can understand it by itself.

Well, the first thing I think I would like to say is that, in the last 40 years, there has been more environmental destruction throughout the world than perhaps during the whole of man's tenancy of this planet. That is, for hundreds of thousands, if not millions, of years, depending on how you define man.

### A VERITABLE BIOLOGICAL HOLOCAUST IN THE LAST 40 YEARS

There has been a veritable orgy of destruction—a veritable biological holocaust in the last 40 years.

Countries in Southeast Asia—which were 70 to 80 percent forested 40 years ago, like Thailand and Malaysia—are now virtually deprived of forests.

These forests were inhabited by viable, self-sufficient tribal and peasant societies. These people are now largely beggars and prostitutes, in the vast slums that are mushrooming everywhere, and which, within a matter of decades, will accommodate about half of humanity.

This deforestation is partly at least responsible for the erosion and decertification which in the last 40 years have been beyond belief. In 1984, farmers are said to have lost something like 24 billion tons of topsoil in a single year.

Waterlogging and soil salinization, caused by vast irrigation schemes, add to the destruction and contribute to making our world increasingly uninhabitable.

This may sound dramatic, but I don't think it is. If you happen to be a sea mammal living in the North Sea or the Irish Sea, life is becoming increasingly difficult—those seas are becoming too contaminated to support complex forms of life. Seal and porpoise populations are disappearing fast.

If you happen to be a tree living in much of Western Europe or on the East Coast of North America, life is also becoming very difficult for the soil and the atmosphere are too contaminated to support such complex and vulnerable forms of life. They are increasingly succumbing to "acid rain."

If you happen to live in Bangladesh, once again life has become an increasingly serious challenge. Last year two-thirds of the country was under water. Recurrent droughts and floods are also making much of the Sudan unhabitable.

The habitability of our planet is also being effected by the erosion of the ozone layer. According to the Environmental Policy Institute, if we do nothing about it, by the year 2180, the concentration of ozone depleting gases in the atmosphere will be five times higher than today.

The likely consequence nobody knows, because there has been little research on it. It appears though that phytoplankton are very sensitive to ultraviolet radiation and a decline in their numbers would adversely affect the whole food chain in the oceans.

The habitability of our planet is also being affected by climate change. Indeed, on the basis of the greenhouse gases that we have generated already, we could have climate changes of 1, 2 or 3 degrees.

The Environmental Protection Agency concludes that if we go on emitting these gases, we may have to face changes of 5 to 8 degrees.

Nobody can really predict whether or not we can adapt to changes of 1, 2 or 3 degrees, let alone changes of 7, 8 or 10 degrees.

We may, in fact, be creating conditions to which man may not be able to adapt.

I think that the human prospect is sufficiently grim to warrant the declaration of a state of global emergency. This may sound dramatic, but I honestly think that this is very realistic. If our planet is to remain habitable, we must make very serious changes to our way of life.

Among other things, we should consider reducing energy consumption, not by 20 or 25 percent, as many of our governments are saying today, but probably something like 70 to 80 percent.

By the way, the Netherlands Government, 2 months ago, suggested just this in a government report entitled "Caring for the Future." The report also stated that general pollution levels must be cut by a similar amount.

Of course, there was a general outcry, and the government has since fallen. That the government should actually come up with a realistic statement of this sort is really significant, and very encouraging.

We must also ban the generation of ozone-depleting gases, and this is not just a question of accepting the Montreal Protocol, which seeks to phase them out slowly. There is no time to be lost. They must be banned immediately.

And, of course, we have to bring a halt to the destruction of world forests.

The burning of forests today may be adding anything from 10 to 30 percent to the emission of greenhouse gases.

Lester Brown, in his last report, "The State of the Global Environment" in 1989, considers that by stopping tropical deforestation, we would cut down emissions of carbon dioxide by 26 percent.

If we were to plant 260 million hectares in the Third World (we have probably destroyed 600 million of forests since the end of the war) that would reduce carbon dioxide emissions by another 18 percent—since a growing forest would provide a major sink for carbon dioxide.

This would help solve a host of other problems at the same time. It would reduce erosion and decertification. It would help control runoff to rivers—and reduce the incidence and severity of floods et cetera.

To stop deforestation means, above all, stopping the big development schemes that are leading to the destruction of forests, and this is where the U.S.A. can come in, because many of these schemes are financed by the World Bank and other multilateral development banks, as well as private banks.

Senator FOWLER. Let me interrupt you, Mr. Goldsmith, because you were just at a point there on the discouragement of the Third World from cutting down their tropical forests.

I understand that you and Mr. Ziegler have a plan.

Mr. GOLDSMITH. I think that Karl Ziegler can describe his plan. The plan I am suggesting is a fairly radical plan.

Senator FOWLER. Well, give me 2 minutes of radicalism there, and then we will let Mr. Ziegler tell us the details of the plan, and then let you wrap up.

Mr. GOLDSMITH. OK.

### REDUCING THE PRESSURE ON THE FORESTS

It also means, of course, reducing the pressure on the forests, and among other things that means cutting down on timber consumption.

Mr. Rey assumes, like most people today, that if there is a demand for a product then we have to provide it. Effective demand must be satisfied, but I am afraid I don't think we can accept that any more.

### WE HAVE TO CUT DOWN ON TIMBER CONSUMPTION

I think we have simply got to realize that we have to cut down on timber consumption. Thailand has now put a ban on further deforestation, but not on its growing timber consumption. It now imports its timber from other countries, such as Burma and Laos, but this is something we can't condone.

Senator FOWLER. Since Mr. Rey is still here, Mr. Goldsmith, listen to me for a second. Since Mr. Rey is still here——

Mr. GOLDSMITH. Yes.

Senator FOWLER. His argument was—he can state it better than I—that if we cut down on timber production in this country, that we have Chile and Guatemala and a number of States that he mentioned that will just increase their cuttings, and therefore we exacerbate the problem in Latin America and South America of the destruction of the forests there.

Mr. **Goldsmith**. That is correct.

Senator **Fowler**. How do we get out of that cycle?

Mr. **Goldsmith**. In the context of a world campaign to keep this planet habitable, we must simply cut down on timber consumption, Government will have to cooperate in reducing consumption by fiscal and if necessary by legal means.

I don't see that there is an alternative to this. People may not be willing to face this today, but I guarantee that within a matter of a few years everybody in this room will have begun to realize that our priorities will have to change if we want this planet to be habitable by our children and that the real resources on which we must depend for our survival are derived from nature—such things as fertile soil, clean water, and a favorable and predictable climate.

If the economic activities that are creating material goods interfere with this, if they deprive us of these real resources, then clearly we have to cut down on the production of these material goods.

Senator **Fowler**. Thank you, Mr. Goldsmith.

Mr. Ziegler, and then we will allow Mr. Goldsmith to wrap it up. Have you got a plan that American participation might help?

## STATEMENT OF KARL A. ZIEGLER, CONSULTANT, ZIEGLER ASSOCIATES, LONDON, ENGLAND

Mr. **Ziegler**. Well, with American leadership, it probably could go a lot further, actually. I think that some of the European countries are further on these matters. I am an American based in London, and let me just round out the introduction a bit more.

### INTRODUCTION

By way of an introduction, I have been in the banking business most of my career. I was head of syndication at First Chicago Limited. And then I moved to Bankers Trust International. So, during the period of this lending frenzy, when money was pushed out to Third World borrowers, with Government encouragement, both here and from the Governments of the European countries where the banks were active in syndicated lending to Third World borrowers.

### MISTAKES MADE BY THE BANKING SECTOR AND THIRD WORLD COUNTRIES

Many of us felt that we were taking the place of AID programs because there was an opportunity through the recycling of dollars to meet the bills of energy imports to Third World countries. The Third World countries at that time had vast industrial schemes and import substitution programs. They were determined to compete with one another and with the North at the time to succeed industrially. And I am afraid there were many mistakes made, both by the banking sector, by the countries themselves, and by their leadership particularly in mismanaging economic plans. And this led unfortunately, as Mr. Goldsmith very accurately pointed out, to a tremendous amount of mismanagement of the most important building blocks of society, which is the ability to feed one's people.

Where there is a clear correlation with poverty, with a population explosion in much of the Southern Hemisphere, which is going to cause a great deal more emphasis to be placed on North-South issues, mercifully taking over from some of the East-West issues which is preoccupied policymakers in Government for so long.

### PROPOSAL

But the proposal I would like to table as the operating document, which I will not read, is a program called "Something for Nothing," [4] which has a more universal view on how Third World debt in lots of different countries can be addressed in a collision course, in a very constructive collision course with one other major problem that our world faces today, and that is the problem that has been discussed just during the course this afternoon of environmental degradation.

### THE WORLD HAS AN OPPORTUNITY

I think the world has an opportunity to basically bring these two issues together in a very constructive way. And the best case study of what I would call "Greening the Brady Plan" at this point in time, which is having a rough ride, both by the Mexicans, the IMF, the World Bank, and the commercial banks, none of these specific constituents seem to be terribly happy at this stage of discussion with the Brady plan as it is now envisaged.

But I am convinced that, in the case of Brazil, except for this country, is the world's second biggest borrower (a larger borrower in fact than Mexico), with its $115 billion of debt, about $75 billion of which is commercial bank debt. I think we have a tremendous opportunity to basically say the Brazilians ought to write their own environmental program. This is the best example of first and foremost requiring that the countries manage their resources best. That is a very obvious thing that has been overlooked in an awful lot of the World Bank and IMF dictation of policy to countries.

It was not really well considered in the commercial bank lending programs in the seventies involving these countries. We have to put the responsibility for economically viable use of their land resources firmly in the hands of these people.

But there is an opportunity, because of the leverage of the international banking debt overhang, to say to the Brazilians who, by the way, under Sarney's leadership, President Sarney, in April of this year, announced a plan called "Our Nature," which essentially meets head on most of the environmentalist groups' concerns for the future of the Amazon Region.

Brazil is looking for funding, in that it incorporates 60 percent of our land mass called Amazonia, Brazil producing 3 percent of GNP. That is a proportion that is way out of whack. And most politicians would be thrown out of office if they produced that kind of resource utilization equation.

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[4] See pp. 144-150 for the document "Something for Nothing."

So, what they basically said is we are in agreement that deforestation and torching this vast land mass every year is bad for our sustainable development. They say that we create within 3 to 5 years a desert where there used to be a living thing, a tropical rain forest with a tremendous biological and genetic diversity, with people who were actually extracting rubber, Brazil nuts, casava, a whole series of compatible small scale agri-based business ventures.

In the future, these kinds of ventures will include aquaculture, turtle and fish farming, and will probably, with intelligent husbanding of the resource, basically yield a far greater return on investment, a far greater contribution to GNP than what we have seen in the past.

Another issue which I do not want to overlook, and it has to be tabled, is that many——

Senator FOWLER. Get to that quickly.

Mr. ZIEGLER [continuing]. Is that many of the resources of the Philippines and Indonesian resources that have been extracted industries, give a rise to flight capital, have benefited a very small proportion of the populations, and have involved corruption primarily.

These kind of things, if the Brazilian Government were to come forward with a program saying that 500 million acres of the Amazon region will be husbanded according to the terms and conditions of an environmentally sound and economically more productive plan called "Our Nature." And if that 500 million acre proposal were packaged by the Brazilians as a proposal that they would contract to, and then present it to the G-7, the primary countries behind the commercial banking holders of that $75 billion of the $115 billion of debt, and say we want you, G-7, to buy in in a deal that you negotiate directly and equitably between yourselves and your commercial banks, $50 billion of debt. And we will allow that to be put on ice for 40 years, and the debt servicing costs will be basically waived for the amount of principal of debt that is put aside.

But, in turn, we will provide 25 to 30 percent per year in Crusado equivalent, in local cost equivalent funds to basically provide 1 million to 1½ million new jobs in the Amazon region, to implement this kind of an environmentally sound and ecologically important scheme for the world. We could then go ahead and have the governments of the North help Brazil to achieve a far greater economic enhancement than what we have seen so far of the Brady plan.

I have been involved in the industry of lending money without being able to watch what happened to it. Now, I am no longer in banking myself, but I would like to be very much involved in unwinding that debt that I helped build up in an environmentally and an ecologically sound way that will give the Brazilian people first the possibility of feeding their great grandchildren and, secondarily, will be of importance in slowing down the greenhouse effect of the terrible environmental consequences which Mr. Goldsmith alluded to just before.

[The prepared material of Mr. Ziegler appears at the conclusion of the hearing.]

Senator FOWLER. Thank you, Mr. Ziegler, very much.

How is the plan going to be presented to the United Nations?

Mr. **Goldsmith**. Well, there are two plans at the moment. There is a plan that Karl Ziegler is involved in, which is basically trying to find a financial deal to induce Third World countries not to cut down their forests.

Several people have worked our plans of this sort, including Karl Ziegler. My brother, James Goldsmith has also worked out a similar plan which has been proposed to Mrs. Thatcher. The Treasury opposed it to begin with as did the Foreign Office, but it appears that Mrs. Thatcher is quite keen on it and has been discussing it with Sir Crispin Tickell the British Ambassador to the United Nations.

There is also a plan drawn up by Ecoropa, a sort of European ecological club. They held a meeting in Luxembourg a month and a half ago with the Ambassadors from Brazil, Colombia, and Peru, and EEC officials.

Senator **Fowler**. Than what about the plan for September?

Mr. **Goldsmith**. On September 19 we are presenting a petition to the Director General of the United Nations backed by 3 or 4 million signatures asking for an Extraordinary General Meeting of the United Nations to discuss the plan.

Basically, it involves systematically reducing the pressure on world forests by putting an end to Western finance for the massive development schemes which are leading to forest destruction.

In a sense, it is complementary to Mr. Ziegler's plan.

Senator **Fowler**. Gentlemen, thank you both very, very much.

I think we had better call it to a close.

I thank all of the participants. Stay tuned. We will be back for more of the same.

[Whereupon, at 5:20 p.m., the subcommittee adjourned, subject to the call of the Chair.]

[Material submitted for inclusion in the record follows:]

# APPENDIX

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## PREPARED STATEMENT OF F. DALE ROBERTSON, CHIEF, FOREST SERVICE, U.S. DEPARTMENT OF AGRICULTURE, WASHINGTON, DC

Mr. Chairman and members of the subcommittee: Thank you for this opportunity to represent the Department of Agriculture as you begin a series of hearings to assess public and private forest lands. I am accompanied today by George Leonard, Associate Chief of the Forest Service.

The Senate Agriculture Committee played a major role during passage of the Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974. RPA requires the Secretary of Agriculture to—

(1) Every 10 years, prepare an assessment of the current and expected future condition of all public and private renewable resources in the Nation; and

(2) Every 5 years, recommend a program of Forest Service actions that responds to the future as depicted in the assessment.

The President transmits the RPA Recommended Program to the Congress with a Statement of Policy concerning implementation of the Program. These documents give us a strong foundation for identifying important issues and identifying our path for the future.

We released the 1989 RPA Assessment documents for public review in September 1988. The final Assessment documents will be printed late this year. Taken together, they evaluate conditions on all forest and rangelands in the United States—not just the areas under Forest Service management.

The 1989 Assessment provides the technical foundation for the 1990 Recommended Program. We will release the draft Program for public comment in about 2 weeks. After considering the comments we get from the public, we will complete the Recommended 1990 RPA Program and deliver it to Congress next spring.

### 1989 RPA ASSESSMENT

I would like to briefly highlight some of the major findings of the 1989 Assessment.

The total acreage of timberland in the United States will decrease by an additional 21 million acres (or 4 percent) over the next 50 years. During the same period, total forest products demand for both hardwoods and softwoods will increase by about 50 percent. The demand will be especially strong for fiber-based products such as pulp and structural panels. Timber harvests will increase, but real timber prices will also increase. There are many opportunities to increase timber supplies through improved utilization, greater harvest of the existing supply, and improved forest management. The number of people participating in outdoor recreation will increase as the population increases. People will recreate more often, but they will travel shorter distances and stay for shorter visits. Growth in incomes will increase demands for more costly forms of recreation such as downhill skiing and boating. Private lands are becoming less accessible for recreation use by the general public. This will place more pressure on public lands, especially those near population centers.

The 1989 RPA Assessment also evaluates the status of other resources including water, range, and minerals. We have provided a summary of the Assessment findings to the subcommittee, and we would be happy to provide additional information at your request.

## 1990 RPA PROGRAM

Based on the findings of the Assessment, the 1990 RPA Program will provide long-term strategic planning direction for the Forest Service. The Program is based on the proposed future role of the Forest Service and the Forest Service response to contemporary natural resource issues.

### FOREST SERVICE ROLES

Over our 84-year history, Forest Service roles have evolved to include three major responsibilities. First, we work with State forestry organizations to help private landowners apply good forest practices on their lands. Second, we conduct research to find better ways to manage and use forest and rangeland resources regardless of ownership. And, third, we manage 156 National Forests, 19 National Grasslands, 83 experimental forests and ranges, and 15 land utilization projects. Taken together, these areas make up the National Forest System which totals about 191 million acres.

We believe our roles must continue to evolve as the needs and desires of people change over time. I will highlight a couple of roles that are particularly important to the Forest Service.

By law, the Forest Service manages the National Forest System for *multiple-use* on the premise that most areas of forest or rangeland can compatibly produce multiple resource outputs, and this capability can be enhanced by careful management. This concept of resource compatibility is a primary basis of our management philosophy. Compatibility—instead of competition—among uses is extended even further through increased resource investments and new scientific management information.

The particular blend of multiple resource outputs from forest lands varies regionally to take advantage of differing land productivity and public needs. National forests in New England, for example, tend to emphasize recreation opportunities because there are not many sizable blocks of undeveloped public lands in that region, and the National Forests in New England are very close to several big cities. National Forests in the Pacific Northwest produce over 40 percent of the timber from that region, because these forests are very productive and support high volumes of valuable timber.

Sustainability and stewardship are key elements of our role in *providing resource opportunities for the future.* Three important concepts underlie this role. First, is the need to ensure sustainable levels of resource outputs. A sustained level of timber harvest is one example. Second, is the need to enhance our ability to provide resources in the future by creating a broader variety of resource opportunities and higher levels of outputs. Third, is the need to preserve ecological conditions that may be impaired through development.

Management of the National Forests and Grasslands contributes to the sustained yield of all renewable resources. For example, sustainable timber outputs are produced on 57 million acres of the 191-million-acre National Forest System. Many laws charge the Forest Service with maintaining opportunities for sustained future opportunities for a variety of uses. Ecological conditions are preserved on 33 million acres of Wilderness as well as other special areas of the National Forest System.

Resource investment programs contribute to the "enhancement" portion of the role in assuring a broad range of future resource opportunities. The Forest Service makes major investments in recreation, range, timber, wildlife, fisheries, and water resources throughout the country to enhance the future productivity of these resources.

Technical assistance to State and private landowners enhances both the productivity and the sustainability of forest resources from non-Federal lands.

Research provides scientific information in direct support of forest and rangeland management on all lands. Research also provides advancements in technology and scientific breakthroughs that expand future opportunities.

We propose in the draft 1990 RPA Program to continue our multiple-use role and provide expanded opportunities for future generations. We want to round out the multiple-use mission of the Forest Service by providing a full spectrum of natural resource products and services.

Our management assistance to State and private landowners will emphasize timber production and give priority to owners who are most likely to make and maintain timber-growing investments for complete rotations.

Management of the National Forests and Grasslands will emphasize the types of recreation, wildlife, and fish investments that are particularly well suited to the National Forest System and those which the private sector is not likely to make.

Future levels of timber, range, and minerals outputs will be the same or only slightly higher than current levels. Timber harvest levels could be raised in some geographic areas where that is not inconsistent with other objectives.

The Forest Service will focus especially on future opportunities that (1) sustain our capability to produce at least today's level of outputs and (2) enhance the future production potential of some resources through increased investments. Preservation of those ecosystems that could be impaired through development will continue to focus primarily on lands already reserved from development, such as wilderness and archaeological sites.

These proposed future roles in multiple-use management and in providing future resource opportunities—as well as other important roles—are fully described in the draft 1990 RPA Program that we will soon make available for public comment.

## FOREST SERVICE ISSUES

The American public holds widely differing opinions about how the natural resources of the Nation should be managed, including resources affected by Forest Service programs. Several contemporary natural resource issues are discussed in the 1989 Assessment and the 1990 draft Recommended Program. I will briefly mention just a few of them.

One issue concerns *timber supplies from nonindustrial private forest lands*. Projections of future timber demand and supply indicate that nonindustrial private lands will have to supply more of the Nation's total timber needs. Tree-planting is also considered an important factor in addressing global climate concerns. While there are abundant timber-growing opportunities on these lands, there is uncertainty about whether most owners of these lands will continue to manage their forests for long-term timber supply purposes. Many owners of nonindustrial private forest lands give more priority to wildlife habitat, aesthetics, and general land stewardship than to timber production.

National Forests provide about 15 percent of the Nation's total timber harvest annually. The National Forests must be a dependable source of timber, but there are also many other resources and values that must be considered.

One of these is *endangered, threatened, and sensitive species*. Some plants and animals on the Federal list of threatened or endangered species require large areas of relatively undeveloped land or special management prescriptions. Meeting the needs of listed species while still achieving other resource objectives is a big challenge. This challenge increases as private land becomes more developed, because public lands will be expected to provide a larger share of the habitat for threatened and endangered species and assume a larger share of the responsibility for their recovery. For example, recent attention has been focused on public lands with respect to the habitat needs of the red-cockaded woodpecker in the South and the northern spotted owl in the Pacific Northwest.

The National Forest Management Act guides us in preparing forest plans that protect sufficient wildlife habitat to maintain viable populations of all native and desired non-native vertebrate and plant species. Habitat requirements, identified in those plans, provide the basis for management direction. Recovery and viability of threatened and endangered species, and continued viability of sensitive species is a major part of *maintaining overall biological diversity*. Our goal is to aggressively implement management actions that will contribute to recovery of these species and their removal from the Federal list of threatened or endangered animals and plants.

A related issue is the *management of old-growth forests*. The amount and location of old growth to be withdrawn from timber harvesting are subjects of great debate. While old-growth forests are found throughout the United States, most of the current concern centers on the Pacific Northwest.

The National Forests contain the largest acreage of old growth of any single ownership in the United States, perhaps exceeding all other ownerships combined. Old growth on National Forests represents a major source of raw material to meet the Nation's wood product needs. Also, old growth is a vital component of forest ecosystems and provides values and uses related to biological diversity, soil productivity, water quality, wildlife habitat, threatened and endangered species, recreation, and aesthetics.

In determining the allowable cut of old growth on NFS lands, we must carefully consider the need to ensure the survival of threatened and endangered species, biodiversity, aesthetics, and community stability.

The Forest Service has responded to the old-growth issue in the forest planning process. Draft forest plans for Oregon and Washington indicate that of the estimated 6.2 million acres of old growth, trees on 3.2 million acres will not be harvested. In

California, about one-third of the estimated remaining old growth—about 400,000 acres—is on lands where no harvest is planned. In Alaska, 4 million acres of the identified old growth is not subject to harvest. Based on the allowable sale quantity proposed in our Forest plans, it would take more than 50 years to cut the old growth that is available for harvest under those plans.

Forest land and resource management plans will be revised every 10 to 15 years to reflect changing conditions and public needs. To improve future planning and decisionmaking, the Forest Service is currently developing new definitions of old growth that should be more widely understood and accepted. New and better information is also being gathered through ongoing inventories. Research to better understand old growth ecosystems is also being expanded.

Management of National Forest timber affects the *competitiveness of the domestic forest products industry* as well as the environment. The U.S. forest products industry is attempting to maintain its share of traditional markets but faces increasingly severe competitive pressures in both domestic and export markets.

Traditionally, Forest Service support for forest products competitiveness has come from our research on forest products and harvesting issues. This Research program support will continue and will be augmented by closer cooperation with the forest product producers to assist them in efforts to be more competitive.

Several issues also arise from beyond the United States that affect natural resource conditions and related Forest Service roles. One is the increasing concern about *global climate change*.

Atmospheric models, incorporating what are known as "greenhouse" effects, project a global atmospheric warming in the next 50 to 100 years. Scientists also anticipate changes in global wind patterns that could result in changes in seasonal and regional precipitation patterns. If these projections prove to be correct, major ecosystem changes will result.

Disruptions of temperature and precipitation due to global climate change are predicted but not confirmed. Both the disruptions and the potential changes in forest ecosystems are poorly understood. It may be many years before definitive predictions of ecosystem and climate changes are available. However, the Forest Service cannot wait for these changes before beginning to act.

We are accelerating our research to develop the knowledge needed for promoting forest health, productivity, and diversity in a changing atmospheric environment. The objective is to provide the scientific basis needed to address broad question on the effects of physical and chemical climate change on forest, range, and related ecosystems. We also recognize that afforestation and reforestation, whether on public or private lands, contribute to the dual objectives of providing more future timber supply and mitigating affects of global climate change.

Potential global climate change is just one issue of international scope. *Tropical deforestation* and the *effects of atmospheric pollution and deposition on forest health* are two issues of overriding importance in international forestry. These issues, along with global ecological, social, economic, and political consequences, could have a major impact on forests in the United States.

Since its establishment in 1905, the Forest Service has had a tradition of international cooperation. Our level of international activity has increased significantly in the past decade in cooperation with the U.S. Agency for International Development and other international organizations. The Forest Service now exchanges information and personnel with more than 30 nations.

We want to increase our role in international forestry through expanded technical and managerial assistance, research and scientific exchange, and training in order to advance the science and practice of forestry in the United States and other countries. This will contribute to improved forest management in the United States and elsewhere, slowing the pace of tropical deforestation, accelerating forest regeneration, promoting sustainable economic development in tropical countries, and contributing to a healthy and stable global environment. It will also lead to strengthened partnerships with other nations, international organizations, the private sector, universities, other Government agencies, and nongovernmental organizations.

Here at home, *urban and community forestry* programs improve our quality of life through the planting and management of trees, shrubs and other vegetation. These efforts make major contributions to soil, water and air quality as well as wildlife habitat and the overall beauty of urban areas. This is accomplished through partnerships with State forestry agencies and professional organizations. The effort is to reverse the current estimate that only one tree is planted for every eight removed in urban environments.

The Forest Service provides technical assistance on inventory methods, tree planting, maintenance, selection and sources of appropriate species, and on general management and planning of urban forest resources. More people should be aware of the benefits of urban trees such as their ability to moderate temperatures and reduce energy needs for heating and cooling, as well as their environmental benefits. Many unanswered questions and problems in urban forestry are being addressed by research.

Mr. Chairman, we believe the 1989 RPA Assessment and the 1990 RPA Program will provide much valuable information as the subcommittee explores the many complex issues related to the public and private forest lands. We look forward to participating in followup hearings on more specific topics. We stand ready to help in any way we can. George Leonard and I would be pleased to respond to your questions.

STATEMENT OF FREDERICK W. CUBBAGE, ASSOCIATE PROFESSOR,
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on

# HARVESTING AND REGENERATION RATES ON PUBLIC AND PRIVATE FOREST LANDS

before

U.S. SENATE SUBCOMMITTEE ON CONSERVATION AND FORESTRY
HONORABLE WYCHE FOWLER, JR., PRESIDING

JUNE 21, 1989

The issues of forest harvesting and regeneration on public and private lands are becoming increasingly important, as this subcommittee hearing suggests. Forest management is becoming more important because timber supplies appear to becoming scarcer, forests provide wildlife habitat to many plentiful and endangered species, and forests also provide a plethora of other environmental benefits. However, the demands on forests for market and nonmarket goods and services have increased substantially, the forest land base in the U.S. has declined somewhat in the recent years. These issues indicate that how we harvest and regenerate forests will be crucial in meeting the nation's future supplies of forest outputs.

## CURRENT ISSUES

Many issues occur in forest harvesting and regeneration in the United States. Perhaps foremost among these is the question of whether forests ever should be harvested. Many people and interest groups in the United States tend to oppose timber harvesting per se on many public and private lands. These groups often lobby in favor of setting aside forest areas for wilderness areas, or even of preventing timber cutting on neighbors' lands in order to protect the value of their own home or recreation sites. Groups who oppose timber harvesting may not do so on all lands, but surely would like less timber to be harvested on national forests, less in urban areas, less in scenic mountain areas, and less in valuable wetland ecosystems. These preferences for less timber harvests are pervasive, are probably held by a majority of citizens in the United States, and seem fairly compelling. Despite the sentiments for forest preservation, many individuals and groups in the United States depend on timber harvesting for their livelihood in order to manufacture products ranging from lumber for houses to plywood to concrete forms to pulp for diapers to paper for writing. The timber products industry is one of the most important basic industries in the U.S., and is the largest contributor to value added in most southern and northwestern states. These two value bases--forest preservation and forest use--have been the underlying themes behind forestry issues, including timber harvesting, for almost a century.

Even if we concede that timber harvest must occur, as we must, the question then becomes how much timber should be cut, how much land should be reserved from timber cutting, how much effort and capital should be devoted to harvesting, regeneration, and increasing productivity, and what is the role of public policy. Again for almost a century, conventional wisdom has held that the U.S. has harvested more timber than it has regenerated, and that we will run short of economical timber supplies. This wisdom has perhaps been augmented in recent years by fears that excessive forest harvesting will also lead to destruction of plant and wildlife species in forests. These fears have been enhanced in recent years as less remaining old growth forests remain, and the ecosystems associated with these forests are threatened. Again, however, despite this conventional wisdom, we have not yet run out of timber or of most native plant and animal species. But real timber prices have increased and some plant and animal species have become rare and endangered. In conclusion, these issues have led the U.S. to develop and maintain an extensive role in forest policy. The relevant question now is how extensive should this role continue to be?

## PUBLIC POLICIES

Many public forest policies are designed to promote timber production and environmental protection on public and private lands. In its first century, the U.S. official policy was to dispose of all public lands, including forest lands. Fears of timber shortages and wildlife extinction prompted reversal of this policy, most notably in the setting aside of almost 200 million acres of national forest land and the retention of hundreds of millions of acres of other public lands. This effort at government ownership and management of forest land was unique at the time, and has led to our extensive National Forest System. In the 1920's, public programs were begun to provide federal and state cooperation to assist private forest landowners in forest protection and timber production. These programs have expanded to provide forest fire, insect, and disease protection; to grow seedlings for planting; to educate private forest landowners and foresters; and to perform research on forestry problems. Additionally, the federal and state governments also provide a variety of incentives, subsidies, tax benefits, and other forms of financial assistance to forest landowners to produce varied forest outputs.

These public policies have been based on perceived needs to grow more timber, produce more game species protect rare or endangered plant animal species, enhance water or air quality, regulate water quantity, and other purposes. The hearings today address forest harvesting and regeneration, which affect all the outputs listed above. What role should the government play? Let me address this for both public and private lands.

### Public Lands

Harvest and regeneration of forest lands will be the most important issue that will occur on public lands now and in the future. Reserving public lands from harvest will favor species that require old-growth forests and the values of people who favor using public lands for wilderness or other amenity purposes. Advocates of not harvesting timber suggest that nonmarket values are more important than market, and that political resource allocation is better than market allocation. However, in the West, a large share of the timber supplies are held on public lands. Even in the East, a significant share of quality hardwood timber is held by public owners. Additionally, even if we do not harvest these trees, they will senesce, die, and be replaced by other species through the process of succession. So even if harvest does not occur, succession will occur. Appropriate policy will include some preservation and some planned harvest and regeneration.

Where forest management is deemed appropriate, debate still will occur over the types of harvest and regeneration that are appropriate. Environmental groups tend to favor natural stand management and regeneration, and selection rather than clear cutting. These methods seem more natural, as the name infers. Industrial and often public foresters often favor clearcutting, for biological and economic reasons. Clearcutting often favors pioneer species that are more valuable for timber than those species that come to dominate under selection harvests. It also is usually cheaper than marking individual trees. Clearcutting also often is similar to some extent to natural processes, where massive blowdowns, insect attacks, or fires provide large openings in old growth forests. Performed poorly, however, it may have adverse effects on the site--erosion, loss of nutrients, compaction, or other external effects. On the other had, selective harvests may have almost as much damage to the site, and damage residual trees as well. In either case, research has shown that the damage to the site or water quality from harvesting and regeneration tends to be short-lived.

Planned natural or artificial regeneration provides obvious benefits over harvests lacking such planning. It can grow preferred timber or wildlife species, often with fast growth rates, which provides benefits sooner than unplanned regeneration. Planning also can promote forest benefits for a variety of other purposes. It also reduces costs, in addition to increasing benefits.

## Private Lands

Public policies also greatly affect harvesting and regeneration practices on private lands. Private landowners own their property in fee simple, but may be subject to some public control in order to prevent pollution or ensure future timber supplies. Most western states and a couple of states in the east have state forest practice acts that are intended to prevent pollution during timber harvest and to require regeneration. Most other states in the U.S. have voluntary best management practice programs that are intended to protect water quality during timber harvesting and site preparation for regeneration. Federal programs such as the Forestry Incentive Program (FIP), Agricultural Conservation Program (ACP), and Conservation Reserve Program (CRP) provide federal incentives to plant and manage forests for timber and wildlife purposes. Many states have modest incentive programs as well. Tax benefits also help private landowners manage these forests, as does the provision of state and federal technical assistance and forest protection programs.

Private forest landowners own the largest share of forest land in the United States, and hold the most promise for any possible increases in expanded outputs of market and nonmarket goods. Conventional wisdom holds that nonindustrial private forest (NIPF) lands are underproductive, and that their owners require government assistance to help productivity of these lands approach its potential. NIPFs are generally believed to be growing less than possible and to harvest often without planning for regeneration. Real economic market failures contribute to the cursory management practices of many NIPFs. The long rotations and low returns for timber growing often provide inadequate incentives for investments now. Research has shown that prices in the future have little effect on planting rates now. NIPF timberland owners often do not realize that the volume or value of the timber they own. Furthermore, private landowners may not receive any compensation for the benefits they provide in providing wildlife habitat or environmental protection. Lastly, NIPF owners often hold forests for amenity values, not the production of commercial timber.

These market failures and the great potential for NIPF owners to increase forest growth, and even forest land area, justify an important government role. The federal and state governments should continue to provide or enhance programs that increase planned natural or artificial regeneration, expand the nation's forest land base, and protect the environment during timber harvesting and forest regeneration. As the demands for non-market goods on public lands increase, and urbanization competes with forestry in the suburban fringe, we must manage our remaining forest lands more intensively in order to retain important economic and environmental benefits.

## CONCLUSION

Pressing demands on our public and private forests have increased contention among groups that generally favor forest preservation and those that generally favor commercial use. Environmental protection criteria might suggest that we limit timber harvesting, especially on sensitive sites, to protect wildlife, water quality, and aesthetic values. On public lands, these claims must be balanced against the economic needs of many businesses and eventually consumers that depend on timber as a raw material. On private lands, environmental protection criteria must be balanced against the rights of private property owners to manage their lands and receive adequate returns on their forest land investments.

More public forest land undoubtedly will be devoted to wildlife habitat, but this should not be so excessive that profitable, efficient forest products mills or firms are forced out of business. This will cause a great cost in terms of direct employment and secondary income in timber-based economics. Public policies should encourage private forest landowners to harvest timber prudently, regenerate forests quickly by planting or planning, grow timber faster, and produce more nonmarket benefits such as wildlife habitat and enhanced water quality. Existing public programs have helped achieve some of these goals. They should be continued and enhanced to help the nation meet its concomitant needs of providing a competitive forest products industry and of improving wildlife habitat and environmental protection.

## STATEMENT OF DR. CARL F. JORDAN, SENIOR ECOLOGIST
## INSTITUTE OF ECOLOGY, UNIV. OF GEORGIA, ATHENS GA.

Mr Chairman, members of the Committee, I appreciate this opportunity to discuss the sustainability of timber supply, wildlife, and recreational values in forests of the United States.

The greatest present threat to sustainability of timber supply, as well as associated benefits of forest lands such as wildlife and recreation, is the undervaluing of forest products. The threat stems from the law of supply and demand. If a resource or good is underpriced or undervalued, that resource will be squandered or used inefficiently.

Evidence for undervaluation of forest products is the below-cost timber sales that occur on our National Forests. The price that timber companies pay for timber on many of our National Forests is less than it costs the Forest Service to make the timber available.

### Reasons for Below-Cost Sales

Why are there below-cost timber sales? In some areas, part of the cost of managing the forests, including costs of road building, is charged against benefits such as wildlife, water, and recreation. However, there is serious question as to the assumptions underlying this approach. While timber harvest does increase such species as white tailed deer, it diminishes rare species such as the spotted owl which is dependent on old growth forest. Building roads into National Forests may increase access for some tourists, but such roads seriously decrease or eliminate the possibility of recreation activities such as Wilderness Experience.

In some areas such as the Tongass forest in Alaska, below-cost timber sales are conducted to promote regional economy.

### How Forest Harvests are Decided

In the open, industrial marketplace, the demand for a good results in a price than ensures an adequate supply. However, the marketplace plays no role in determining the amount of timber to be harvested on public lands. Here, forest harvest has been based on Congressional mandate, or Forest Service administrative decisions. Although the Forest Service conducts what are called "Timber Sales", they are not sales in the usual sense, where selling price reflects costs plus reasonable profit. The "sales" are really purchase agreements that have no relation to costs of planting, managing, and building roads to facilitate harvesting. The below-cost timber sales result in the growth of a timber using indutry and a consumer group that does not pay the true cost for forest products. Consequently, there is little long term stability built into the forest products economy.

### Threats to the Forest Environment

Management activites including harvesting, if it is done carefully, do not necessarily pose any great threat to sustainable production by our forests. The greatest threat to continued sustainable forest growth may be the roads being constructed in National Forests to promote timber sales. It is the roads that cause the problems. Erosion, washouts, and the continuing bulldozing necessary to keep the roads open are the environmental threats to a sustained timber supply, and to environmental quality.

Roads cause erosion which damages forest production and reproduction. Erosion silts streams, decreases water quality, and diminishes recreational activities such as fishing. Roads open up areas to off-road vehicles, a major threat to forest integrity throughout the country.

Road building is frequently the greatest expense associated with management in National Forests, and contributes heavily to expenses which reduce profitability of timber sales.

## Possible Solutions

Prices for stumpage and for timber products should reflect the true total cost of producing, managing, and harvesting the timber crop. Costs of road building, which benefits primarily timber harvesting companies, must be paid for through increased prices for timber products. In the short run, this would drive up wood prices, and force some mills out of business. In the long run, it would bring more private landowners into the business and ensure a profitable and sustainable forest products industry.

To adequately assign the costs and benefits of management of National Forests for timber, it may be necessary to eliminate the concept of multiple use, at least for the purpose of cost accounting. Some stands would be managed exclusively for timber. Other stands would be preserved for other benefits. This would eliminate the clouding effect of including in the economic calculations, dubious benefits for wildlife and recreation derived from road building and timber harvesting.

## Privately Owned Land

The preceding remarks remarks apply primarily to national forests. On private land, the situation is highly variable, but private ownership does not necessarily guarantee adequate prices to guarantee sustained yield. Forests on the Piedmont of Georgia are a case in point. Pine forests became established naturally on abaondoned cotton fields in the first half of this century. There was very little investment in these forests. Today's prices for wood being harvested from these forests may not reflect costs of intensive site management.

## Conclusion

An approach that fixes the price of forest products at a level that adequately reflects the costs associated with managing and harvesting those products may be the most appropriate way to ensure a sustainable supply of timber.

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Senator Wyche Fowler
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Dear Senator Fowler: June 23, 1988

During the hearings of the Subcommittee on Conservation and Forestry on June 21, you requested members of the panels to supply additional information on some of the points that were raised. I would like to take the opportunity to do so.

During the questioning of our panel, you asked me for a definition of "sustainability". You seemed somewhat dissatisfied with my classification of sustainability into "ecological", "technological" and "economic" sustainability. You indicated that you were looking for a commonly accepted definition of the word. It would seem that defining it should be easy. Everyone thinks they know what "sustainability" means. However, "sustainability" is like "virtue", another word that everyone thinks they understand. A definition turns out to be elusive. Let me explain.

You suggested that "sustainability" with regard to forests could perhaps be defined as planting a tree for every tree that is harvested. That seems reasonable, until you realize that if you plant just one tree for each tree harvested, then you will lose much of your forest, because many seedlings are lost to herbivory, competition etc. Many seedlings must be planted for each one harvested, but how many can vary. How about natural reseeding? By far, most of the forests regenerate by natural reseeding. Are natural forests reseeding themselves? Perhaps, but often with different species than were harvested. Does this count? Depends on what species you are interested in.

Such difficulties with a "common man's" definition of "sustainability" is the reason I tried to emphasize "economic sustainability" as a criteria for judging the state of our forests. Some species, such as black walnut have a value so high, that it is economically worth while for private land owners to plant these trees, anticipating good profits when the trees are ready to harvest. The free market ensures a sustainable production of this species.

To ensure economic sustainability, prices of timber must be adequately high. There must be no more below cost timber sales. Such sales are a powerful disincentive to producers.

During the hearings it was suggested that increasing the price of U.S. timber by eliminating below cost sales would result in a flood of timber from such places as the Amazon. This might be true, if Instututions such as the InterAmerican Development Bank continue to finance road building and paving into the Amazon forest. Only because Brazilian loggers have access to the forest via roads payed for by the U.S. taxpayers via the International Development Banks could Brazilian logs undercut U.S. prices. My expertise is in ecology and forestry of the Amazon Basin, and I have written several books and papers, emphasizing that only through massive U.S. subsidy can Brazilian wood be harvested and sold on the open market. If the Banks would stop financing new roads into the virgin forest, and concentrate on planting trees on already degraded ares, the economy and ecology would both be much better off. The solution here is to require the International Banks to stop such destructive lending practices. Recently, the World Bank has ceased such environmentally destructive loans for road building in Brazil, but Brazil has begun lobbying the InterAmerican Development Bank to renew its funding of the highway which would connect the Brazilian Amazon with Lima, Peru, and thus facilitate the shipping of Amazon timber on the Pacific.

There is one other point that I would like to comment upon, that arose during the hearing. Several of the industry and Forest Service spokesmen indicated that in the U.S., that the "demand for timber exceeds the supply". The implication was that the Forest Service was somehow responsible for satisfiying unfulfilled demand. This is nonsense. Demand for a product or resource almost always exceeds supply, but demand in a free market is kept in balance with supply by price. Underpricing results in inefficient use and sqauandering of a resource, and in the long run, unsustainability of that resource. "Demand" in the sense that somebody wants more cheap timber surely exists, but it is not incumbent on the U.S. government to appease this demand by subsidies from tax dollars. Let those who want it, pay the full cost.

"Demand" in an economic sense does not exist in a vacuum. It exists only in relation to supply, and that is regulated by price. That is why below cost timber sales are the greatest threat to the sustainability of our forests. The solution seems straightforward. Forbid any more below cost timber sales. And as I suggested in my testimony, also forbid including such dubious benefits as enhancement of wildlife and recreation to be charged against the cost of road building in the national forests.

In closing, I would like to reiterate my plea that you not be misled by statements about unfulfilled demand for timber products. Demand for an economic good increases as price drops, till the point where demand is infinite where the price is free. In the sense that "demand" was used by forest industry spokesmen during the hearings, it can never be satisfied.

Sincerely yours,

Carl Jordan

Carl F. Jordan
Senior Ecologist

NATIONAL ASSOCIATION OF STATE FORESTERS

## STATEMENT BEFORE THE SENATE AGRICULTURE SUBCOMMITTEE ON FORESTRY AND CONSERVATION

**John W. Mixon, Georgia State Forester**
**National Association of State Foresters**

**June 21, 1989**

Mr. Chairman and other members of the committee, my name is John Mixon, State Forester of Georgia. I consider it a privilege to be here today representing the National Association of State Foresters. The primary responsibility of our agencies is to protect and manage state and privately owned forest land in our respective states.

Collectively, state forestry agencies protect, service, or manage over 80 percent of this nation's forest land -- or about 500 million acres. They work cooperatively with private, Federal and other state agencies, organizations, and individuals in directing and strengthening all forestry programs.

We are here today to assess the sustainability of our nation's public and private forest resources. Estimates from many sources predict that demand for wood will increase significantly by the beginning of the next century -- which is only a mere ten years away. The U. S. Forest Service has estimated that by 2030, wood demand could increase by more than 70 percent.

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I believe it is fundamentally important that we realize that our forests represent a valuable, renewable resource. To sustain this resource, that is both public and private, it will require efforts on all levels of government and cooperation from organizations and individuals. In essence, it amounts to the practice of good stewardship!

Without a doubt, increasing pressures will be exerted on our public forests to provide more commercial timber, as well as to meet growing environmental and recreational needs. Public forests are established by law to provide a variety of benefits to many interests. We are going to see increasing demands for recreational opportunities, wildlife habitat, water quality protection and scenic vistas.

The issues surrounding the spotted owl and red-cockaded woodpecker have recently made us abruptly and painfully aware of the many conflicts to logging the national forests. They are issues that will shape the future and they are neither going to be solved easily now or in the near term!

Public lands currently include about 20 percent of the commercial timber base in the United States or about 100 million acres. It is one-fourth of the total annual commercial timber harvest. To maintain the current market share, public forests would have to increase their annual softwood harvest by nearly four billion cubic feet in the next 40 years. It just does not seem feasible that the public forests will be able to provide this kind of increase.

Increased commercial wood production from non-industrial private forest lands (NIPF) could reduce pressure on public forests to meet the nation's increasing wood demand. Three-fourths of the commercial timber land in the U. S. lies in private hands. In the South, for instance, 70 percent of the most productive timberland is privately owned.

NIPF lands hold enormous promise for increased commercial wood production. However, much NIPF land is not actively managed. In fact, the United States Department of Agriculture has estimated that at least 120 million acres of currently undermanaged private timberland and idle, cropland could produce substantial additional quantities of commercial wood. Although private forest lands contribute nearly half of the country's total timber harvest, they account for only a third of its overall reforestation.

Sound management, of course, is crucial to increasing the productivity of our nation's forest resources. Proper management practices -- use of techniques such as vegetative buffer strips around rivers and streams, careful logging road construction, selective harvest -- provides many benefits. Sound forest management can prevent watershed and soil damage, enhance the regeneration of healthy forests, and protect wildlife habitat. The key is the careful tailoring of practices to individual site characteristics.

There are a variety of assistance programs that attempt to reach the private forest landowner. The states provide much of the administration for federal programs, and nearly all education and technical assistance is funnelled through the state foresters. Most state programs are directed at activities such as water quality protection, reforestation, timber management, and wildlife and aesthetic management. Several provide their own cost-share programs for tree planting and timber stand improvement.

The U. S. Forest Service, through its State and Private Forest (S&PF) branch, is structured to provide technical and financial support for improved forest resource management, utilization, protection, and planning on non-federal forest lands. Several other federal assistance programs, such as the Forestry Incentives Program and Agricultural Conservation program provide landowners with limited cost-share assistance that might include site preparation, tree planting and/or stand improvement practices.

The payoff associated with federal and state programs that reach NIPF owners is substantial. Technical assistance increases the probability of harvest, regeneration, received per unit of timber and present value per acre of forest holdings. Moreover, public forestry assistance can pay off in the form of increased income tax revenue to public treasuries.

Unfortunately, these programs are not nearly large enough. Currently, the government is assisting timber owners on only one percent of the country's 333 million acres of private forest land. Federal and technical assistance programs are reaching less than 200,000 of the country's nearly eight million NIPF landowners.

In addition, the State and Private forestry portion of the Federal Forest Service budget has declined approximately 44% since 1982 in constant dollars when adjusted for inflation. For FY 90, the Administration requested only $48 million -- a 56% reduction from FY 89 appropriation levels. It is through the cooperative efforts of these programs that the greatest potential exists to increase the productivity of our forest lands.

Finally, permit me to mention a program that the National Association of State Foresters has proposed for funding. It was brought before House and Senate Appropriations Committees this year. It is the Forest Stewardship Program. State Foresters and the Forest Service have worked together to develop this program that would address many of the needs and problems that have been discussed here today. The Forest Stewardship Program represents a creative effort to bring many organizations -- government and private -- together at federal, state and local levels to ensure the future of our nation's private forests, as well as the many other resources our woodlands complement.

As proposed, this new program would place 25 million acres of NIPF land under stewardship management. Its objective is to develop a forest resource base on NIPF land which will sustain economic stability, as well as environmental quality. It will provide assistance to landowners to manage all forest resources, with special emphasis on water, wildlife, recreation and timber.

The Federal Government would serve as a catalyst to implement the program that state government would continue to manage. State and local governments would match Federal funds. It is designed to continue the partnership at the state and local level between the private and government sectors. It will coordinate and streamline natural resource agencies assistance to NIPF landowners. It will assist landowners before the timber harvest to reduce environmental impacts and forest regeneration costs, as well as Federal Government expenditures over the long term. It will increase tree growth to help meet projected shortages of timber.

The Stewardship Program has received the support of the American Forestry Association, the National Woodlands Owners Association, the International Association of Fish and Wildlife Agencies, the Wilderness Society, the Wildlife Management Institute and many other organizations.

I believe a program such as this one -- programs modeled after it - provide solutions for the future. As the public demands more and more of the resources from the national forests, we can reduce our reliance on public lands for timber resources by increasing production in the private sector. Our private forest lands, without question, offer the potential for fulfilling future timber demands. And this can be done without risk of sacrificing other resource values!

Thank you, Mr. Chairman, for the opportunity to present our views. This concludes my statement.

# STATEMENT OF DANIEL SIMBERLOFF, ROBERT O. LAWTON DISTINGUISHED PROFESSOR OF BIOLOGICAL SCIENCE, FLORIDA STATE UNIVERSITY, TALLAHASSEE, FLORIDA. JUNE 21, 1989

Mr. Chairman and members of the subcommittee, I thank you for the opportunity to discuss aspects of forest management.

## INTRODUCTION

The relationship among the timber supply, wildlife habitat, and environmental health is so complex that even a single large book could probably not do it justice. So I will focus my brief presentation on two particular problems with national forest management. These exemplify similar situations throughout the national forest system and relate to broader issues of maintaining biological diversity and environmental quality. The two particular problems are management of the northern spotted owl in the Northwest and the red-cockaded woodpecker in the Southeast. In each instance a species is gravely threatened by habitat destruction, this threat was recognized well before substantive action was taken, and when action was taken by the Forest Service in conjunction with the U.S. Fish and Wildlife Service (USFWS), it was dilatory and remains at best inadequate and often perfunctory. Most importantly, these birds are not the only species in these forests whose continued existence is in doubt - they just happen to have been studied sufficiently that the threat is apparent. I will return to this point at the end of my statement.

## BIOLOGY OF THE SPECIES

Both the owl (Dawson et al. 1987, Simberloff 1987, U.S.D.A. Forest Service 1988) and the woodpecker (Ligon et al. 1986, Jackson 1988) require large acreages of old trees. The exact amount varies depending on the geographic location, nature of the trees, etc., but owl home ranges average between 2,000 and 7,000 acres (most of which must be old growth), while a woodpecker "clan" (breeding pair, often with a few associated helpers) home range averages about 200 acres, ranging up to 1,000 acres in poor habitat. It is this requirement for large areas of old trees that has caused populations of both species to dwindle towards extinction.

About 5,000 owls remain, and fewer than 10,000 woodpeckers. Each species used to occupy vast, relatively continuous expanses of old forest but has become essentially an island species as its habitat has been fragmented into smaller and increasingly separated "habitat islands." Of ca. 70 million acres of longleaf pine (the woodpecker's preferred habitat) originally in the Southeast, perhaps 10 million acres remain. Even this figure is deceptive because the vast majority is relatively young second growth, the natural fire regime that originally maintained longleaf forest has been deliberately disrupted in almost all locations, and typical site preparation on both public and private lands destroys the cover of ground plants, especially wiregrass, that is critical to longleaf pine (Simberloff 1988). The old growth forests of the Northwest required by the owl originally covered about 15 million acres. The Forest Service argues that ca. 4 million acres remain in the national forests of Washington and Oregon (these forests constitute most of the available suitable owl habitat), but a recent study by the Wilderness Society (Morrison 1988) suggests that less than half of this acreage is, in fact, suitable owl habitat by the Forest Service's own criteria. In short, both birds are increasingly restricted to smaller and smaller islands of suitable forest in a sea of second growth, agriculture, and other developed land.

## HISTORY OF THE THREAT, AND OF SUBSEQUENT MANAGEMENT

Before the 1970s the owl was not generally recognized as threatened and biologists did not understand that it requires old growth forest. Field guides simply called it "secretive," "uncommon," etc. The first thorough studies documenting the relationship to old growth appeared in 1974 (California) and 1976 (Oregon), though scientists and managers were already beginning to recognize this relationship and saw that it might entail a danger to the owl population. In 1973 an interagency committee (including the Forest Service, USFWS, and Bureau of Land Management) recommended retaining 300 acres of old growth around each nest site, a recommendation rejected by the Regional Forester on grounds of insufficient knowledge of habitat. In 1976 the committee set a goal of at least 400 owl pairs on Oregon public lands, and in 1977 the Regional Forester agreed to protect owl habitat as recommended by the committee, except where timber sales already existed or were planned for 1977. In response to a lawsuit in 1980, the Chief of the Forest Service upheld the Regional Forester's decision, but called for an analysis of owl population viability, and directed an interim protection of 290 pairs in Oregon.

In its 1981 draft of the Regional Plan and 1984 Final Regional Guide and Final Environmental Impact Statement for the Pacific Northwest Region, the Forest Service proposed to reduce the population on national forests in Oregon and Washington to 375 pairs on 1,000 acres of old growth per pair. This decision was in spite of available knowledge that the owl typically used much larger home ranges and apparently suffered greatly reduced reproduction when confined to smaller areas and/or when it foraged in suboptimal habitat. The major American ornithological societies convened a spotted owl panel, whose report (Dawson et al. 1987) suggested that, at a bare minimum, greater numbers and larger home ranges would be required to avoid extinction. In 1988 the Forest Service issued its Final Supplement to the Environmental Impact Statement for an Amendment to the Pacific Northwest Regional Guide, in which it still recommended substantially fewer pairs and smaller home ranges than the panel had suggested as absolute minima, and proposed to lower owl habitat in the Pacific Northwest by about half during the next century. The justification for this recommendation was a judgment by Forest Service staff, in the absence of scientific principles, that the proposed course of action would probably not eliminate the owl population within a century (Simberloff 1989).

Concurrently with this Forest Service activity, environmental organizations petitioned the USFWS to list the owl as endangered. In late 1987 the USFWS announced that, in concert with an interagency agreement with the Forest Service, it would not grant the endangered status. However, a federal district judge ruled this action "arbitrary" and "capricious" in November, 1988, saying that the USFWS's own scientists had shown that the bird was disappearing because of forestry practices. Further, in February 1989, the General Accounting Office concluded that political rather than scientific considerations had motivated the USFWS decision, and that management officials had changed scientific recommendations (Anonymous 1989). Finally, in April, 1989, the USFWS reversed its decision, beginning a process (projected to take a year) that will lead to listing the owl as "threatened" (but not endangered). The exact impact of this status on logging practices is not yet known. Meanwhile, the Forest Service is seeking a plan whereby there would be a "phased reduction" in harvesting of owl habitat, rather than an immediate stop (Diringer 1989).

The threat to the red-cockaded woodpecker was recognized earlier than that to the northern spotted owl. As early as 1939 and 1949, papers in the scientific literature noted declining populations, associated them with habitat loss, and voiced concern for the species' survival (Lennartz and Henry 1985). In 1970 the bird was placed on the United States list of endangered species. Jackson (1971) summarized the reasons for concern and state of scientific knowledge at the time, pointing to habitat loss and fragmentation. In 1975 a Recovery Team was appointed for the woodpecker, consisting of academic, government, and industry scientists. In 1979 the USFWS accepted the plan (Jackson 1979 et al.), a compromise among all the interests represented on the Recovery Team. However, the Forest Service and other forestry interests immediately attempted revisions in the management provisions (Jackson 1986). Simultaneously, new biological information suggested that the original plan would not allow for the species' needs. However, the Recovery Team was not allowed to revise its recommendations and was disbanded in 1982. In 1983 the USFWS contracted with a Forest Service biologist to revise the recovery plan. The "revision" (Lennartz and Henry 1985) was accepted by the USFWS, but differs so greatly from the original that the senior author of the latter rejects the term "revision" (Jackson 1986).

As with the spotted owl, a professional ornithological organization appointed a committee to examine the woodpecker case. The committee noted (Ligon et al. 1986) that, though the species had been listed as endangered for over 15 years, there was no plan to increase its numbers, which continued to decrease rapidly, and that the populations were increasingly isolated. The committee found forestry practices such as clearcutting and early harvesting at the root of the woodpecker's problem, and identified major shortcomings with the recovery plan. Also as with the owl, the committee found that the recovery plan constantly emphasized the absolute minima that might sustain the species - minimum areas for each clan, minimum population sizes, minimum ages for trees, etc. And, as with the owl, the Forest Service constantly emphasizes maximum prospects for population persistence - maximum use of available habitat, maximum densities within habitat, maximum survival and reproduction, etc.

A press release by the Forest Service on March 29, 1989, announced a new woodpecker policy. In all but two national forests (Apalachicola [Florida] and Francis Marion [South Carolina]) there will generally be no clearcutting within 3/4 mile of a red-cockaded clan site; instead, these areas will be "thinned." This policy, in response to the declines in most woodpecker populations, is very similar to that mandated by a federal judge in Texas, although the press release does not mention this fact. What is remarkable about this action is that, to this day, neither the Forest Service nor the USFWS is even trying to manage a region so that the population is stable. Rather, without an accurate census of the number of birds present in the Apalachicola and Marion National Forests, females are currently being removed from these populations and translocated to other regions in the hopes that they will pair with unmated males.

In sum, both the owl and the woodpecker are declining and already in danger of extinction, yet the Forest Service, in conjunction with the USFWS, is planning to reduce their habitat still further. The agencies have used questionable assumptions to produce estimates and predictions that greatly understate the threat to these species and overstate the prospects for long term survival. Rather than practice conservative management, they have typically followed extremely risky courses of action. Response to the threat of extinction was belated in both cases, and often motivated by legal action by citizens' groups. Management plans were consistently pro forma legalistic responses to the exigencies of legal actions or (for the woodpecker) the Endangered Species Act, rather than full-scale attempts to save the species. Further, as with so many environmental issues, the responses in both cases have usually consisted of delaying tactics, arguing against scientific consenses of an imminent threat that further information is needed and that, to the maximum degree legally possible, business can be conducted as usual in the interim. One can always ask for more information on any scientific issue, but establishing causal relationships does not require complete knowledge. Timber interests argue against the scientific consensus on the owl's requirement for old growth on the grounds that scientists cannot yet say exactly what it is about old growth forest that the owl needs. This is precisely analogous to arguing that, because we do not yet know exactly what it is about smoking tobacco that causes cancer, we cannot say that it does cause cancer.

A pervasive problem in ~~both~~ instances is that key assessment and research activities that justify management plans are conducted by Forest Service personnel. Their work may be less than dispassionate in some instances because their agency has a stake in the results. Indeed, independent scientists and federal judges have cast doubt on the validity of management procedures based on in-house scientific research on both birds conducted by the Forest Service. Although grants and contracts by the Forest Service to independent researchers are not completely free of the obvious potential for conflict of interest, such research would surely be less likely to be manipulated because of non-scientific considerations.

## ENDANGERED AND MANAGEMENT INDICATOR SPECIES AS REPRESENTATIVES

The northern spotted owl was designated by the Pacific Northwest Region of the Forest Service as a "management indicator species," which means that it is viewed as representing, through its habitat requirements, many other species whose biology is not as well known. This role of the spotted owl means that intense management for the owl, such as providing nest boxes or supplementary feeding, subverts the indicator function. One cannot manage each species on a species-by-species basis; the biological knowledge is absent, and the cost would be too great in any event. That is why we use indicator species. The northern bald eagle is endangered or threatened in its own right and shares habitat with the owl. Vaux's swift and the red tree vole seem to require the very kinds of old growth that the owl does. The flying squirrel also seems closely tied to old growth in the Northwest. So does the Pacific yew, whose bark is currently being tested as an anticancer drug by the N.I.H. (Booth 1989). Welsh (1989), in the first attempt to relate amphibian distributions to forest age, found the Del Norte salamander, the Olympic salamander, and the tailed frog to be associated with the ancient conifer forests. And there are many more species, such as most insects, that have not been carefully studied.

The red-cockaded woodpecker is not an indicator species, but it could well serve this function as many other species require the same sort of habitat that it does. Bachman's sparrow is certainly one, at least in the southern part of its range. In Florida alone the pine snake, the gopher frog, the gopher tortoise (a management indicator species, and currently under review for federal listing), the flatwoods salamander, the Florida scrub lizard, the short-tailed snake, the Apalachicola king snake, the pocket gopher, and the Florida black bear all require habitats quite similar to those of the woodpecker. I have not even mentioned plants or insects, which have generally not been studied in as much detail as vertebrates have.

Species not only share habitats, but they interact with one another in complex and recondite ways. Scientists often uncover the nature of these interactions only after one species disappears and others are then observed to decline. For example, longleaf pine, wiregrass, and red-cockaded woodpeckers are linked together with other species in a system adapted to occasional fires in such a way that one cannot eliminate some of the species, or the fires that drive the system, without eliminating other species. I have outlined these and other and several other critical interactions in a recent review (Simberloff 1988).

## CONCLUSION

As I said at the outset, the owl and the woodpecker are just two species whose existence is gravely threatened by management practices in the national forests. There are myriad others (Norse et al. 1986 provide several examples). I have tried to emphasize that, as these species dwindle, so do many others associated with them through common habitat requirements, and possibly through biological interactions. In other words, entire communities are at risk. The loss of biological diversity on federal lands is a major component of the current environmental crisis. For both the woodpecker and the owl, as for many other threatened species, almost all remaining individuals are in national forests. So much is at stake that it is unconscionable not to manage these forests as best we can to save what remains of our biotic heritage. Currently our efforts are pitifully short of that goal.

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THE WILDERNESS SOCIETY

## STATEMENT OF BARRY R. FLAMM, CHIEF FORESTER FOR THE WILDERNESS SOCIETY, IN A HEARING BEFORE THE COMMITTEE ON AGRICULTURE, NUTRITION AND FORESTRY, SUBCOMMITTEE ON CONSERVATION AND FORESTRY, CONCERNING AN ASSESSMENT OF OUR FOREST LANDS, JUNE 21, 1989.

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Mr. Chairman and Members of the Committee, I am Barry R. Flamm, Chief Forester for The Wilderness Society. With more than 300,000 members nationwide, The Wilderness Society is dedicated to conservation and sustainable management of our public lands. I appreciate this opportunity to discuss the future of America's forests, in particular the conservation of biological diversity and sustainable forestry. Today I will address major problems related to these topics within our National Forest System.

The 191 million-acre National Forest System is wonderfully rich and diverse. It contains some of the greatest natural bounty on earth--from the magnificent rainforests of the Pacific Northwest and the Caribbean to the captivating deserts of the Southwest; from the rugged alpine region of the Rockies, the beautiful landscape of the Georgia forests, and the rolling grasslands of the high plains to the glacial summits and deep fjords of Alaska. Here lies a vast array of lakes, rivers, streams, mountains, canyons, wildlife, and plants. The national forests also contain commodity resources, such as timber, minerals, and forage for livestock.

By virtue of its size and geographical breadth, the National Forest System may be our country's most important reservoir of biological diversity. Indeed, the majority of natural communities and living, nonmarine species in the United States probably occur somewhere within the national forests. More than 150 federally designated Threatened or Endangered Species occur on national forest lands, along with an additional 1,000 to 1,300 species that are candidates for listing.

National forests should be managed for environmental and economic goals in accordance with ecological principles. They should first and foremost conserve biological diversity, with the managing agency--the Forest Service--maintained as an expert scientific entity while reducing its overall demands on the federal budget.

The primary goal is to instill stewardship in forest management policies. Two rules guide this task. First, irreplaceable resources on national forests should be preserved for the future. Places of great scenic beauty, once spoiled, can never be restored; species driven to extinction can never be retrieved; unique ecosystems cannot be reconstructed. Decisions to destroy these resources are irreversible. If they are to be made, it must be with enormous care and only after consideration of all alternatives.

Second, renewable resources on the national forests should be managed on a sustainable basis to benefit present and future generations. The desire for quick gain coupled with short-sighted policy must not continue. Government incentives leading to such ends should be eliminated.

In relation to this second rule, the Multiple Use - Sustained Yield Act of 1960 mandates that the renewable resources of the national forests be administered for "sustained yield of the several products and services...in perpetuity...without impairment of the land." Unfortunately, "sustained yield" has been subjected to many different meanings and interpretations. An explicit emphasis on timber production underlies most forestry definitions, and foresters generally associate sustained timber yield with the objective of stabilizing small communities. Although these factors are important, we are concerned with the sustainability of the entire forest. We must have a sustainable forest before we can have a sustainable yield of all important forest resources. We must have a sustainable yield to have a sustainable economy and a sustainable society. Today, the principle of sustainability is not being put into practice on our national forests.

The foundation for sustainable forests is biological diversity--the variety of different species, the genetic variability within them and their interactions with each other. Yet, current forest management practices are destroying the health and resilience of natural systems, diminishing soil capabilities to sustain life, degrading water quality, eliminating sensitive wildlife species, and seriously damaging the natural beauty of our forests. In short, sustainable use is being exceeded on these lands, as discussed below.

### A. Carrying Capacity

Present national forest resource utilization levels and practices exceed long term sustainability in that they ignore the land's carrying capacity (the ability to permanently sustain the use of a resource or maintain a healthy population of a plant or animal on a given area). In effect, and as described below, many uses and forestry practices take place on unsuitable lands, promote too much resource extraction, and are not based on the best silvicultural practices.

Exploiting Unsuitable Lands. Despite legislative direction in Section 6K of NFMA to restrict logging, the Forest Service's current programs and future plans continue to allow logging on thousands of acres of unsuitable lands. NFMA explicitly prohibits timbering on national forests except where reforestation is assured within five years. Lands that fail to meet the five-year test must be classified as physically unsuitable for logging and removed from the suitable timberland base. However, according to independent studies, the Forest Service routinely ignores reforestation constraints when determining areas suitable for logging.

Excessive Extraction. The timber cut in national forests has reached record levels in the last few years (12.7 billion board feet in 1987). These high logging levels are causing significant degradation of watersheds, biological diversity, fish and wildlife habitat, scenic beauty, outdoor recreation opportunities, and other forest resources as discussed later in more detail. The cut level exceeds the sustainable capacity of many forests, especially in the Pacific Northwest.

Improper Forestry Practices. The Forest Service's preference for clearcutting as the dominant silvicultural practice contributes significantly to adverse impacts caused by logging. Concerns about clearcutting were a major factor in the debate over passage of NFMA. The Act allows the use of clearcutting only where it is determined to be the optimum method of harvest. Congress clearly intended for other methods to predominate, yet this direction has largely been ignored. Alternative silvicultural systems are available which would better meet overall land management objectives.

The Forest Service is also reducing the diversity of forest species through the use of short rotations, plantation forestry, thinning, and chemicals. Research has shown that plantations and other intensively managed forests have greatly reduced biological diversity and nutrient levels which in turn affects tree regeneration and the processes that maintain long term forest productivity and sustainability.

## B. Resources at Risk

Conservation of Biological Diversity. In the National Forest Management Act of 1976 (NFMA), Congress mandated the protection of biological diversity by requiring that forest plans "provide for diversity of plant and animal communities...." Unfortunately, current Forest Service programs and policies are inadequate to protect the biological wealth of the national forests. Excessive logging is harming wildlife in our national forests. We are in danger of losing many sensitive species across the country.

Where the habitat needs of wildlife conflict with timber goals, the Forest Service has frequently chosen to favor logging over protection of wildlife habitat. For example, populations of the red-cockaded woodpecker, a federal endangered species, declined by 76 percent in the Sabine National Forest in eastern Texas between 1978 and 1987. On the nearby Angelina National Forest, they declined by 42 percent from 1983 through 1987. The reasons for the declines are excessive logging of older pine trees, which the woodpeckers need for nesting, and the degradation and fragmentation of other critical habitat.

In the Pacific Northwest, logging of old growth has reduced populations of the northern spotted owl to the point where on April 25, 1989 the U.S. Fish and Wildlife Service recommended adding the bird to the federal list of threatened species. In December 1988, the Forest Service finalized its spotted owl management plan for 13 national forests in Washington and Oregon. This plan does not adequately address the habitat needs of the northern spotted owl and if implemented would probably lead to extinction of the species, perhaps within a matter of decades.

Additional issues that have arisen on national forests include loss of elk habitat in the Pacific Northwest and Rocky Mountains and loss of forest songbird habitat throughout the eastern United States. Scientists are also concerned about the fate of the black bear in the southern Appalachians region, where projected increases in logging and road construction on national forests will diminish the animal's habitat.

The NFMA requires the Forest Service to "preserve the diversity of tree species" but reforestation guidelines in forest management seldom lead to success. Less diverse forests result when foresters replant or permit the regeneration of only a few of the plant species that occupied the site prior to logging. By doing so, foresters may eliminate uncommon plants that are critical resources for wildlife or even society. In the national forests of the Pacific Northwest, the Forest Service is diminishing the diversity of tree species by replanting logged sites with only one or two of the most commercially viable species. This simplification of the forests may make them more vulnerable to insect pest outbreaks and less suitable for birds. Among the trees that are not replanted is the Pacific yew, a species medical researchers have been studying because of a potent anti-cancer compound in its bark.

Another common forestry practice, called type conversion, involves replanting a logged area with trees other than the ones that occur there naturally. Such forests typically provide poor habitat for wildlife and plants. Type conversions will continue under current forest management plans in some regions of the country.

In short, the Forest Service is not adequately protecting the "genetic library" within the national forests. Failure to reverse these policies guarantees a less diverse forest and zero sustainability of a variety of forest resources.

Water Quality and Fisheries. Watershed protection was a primary purpose for establishing the national forests, but now many valuable drainages have been severely damaged or threatened by Forest Service management practices. Sedimentation is the primary threat to water quality and thus to commercial fisheries and recreation activities. The NFMA prohibits timber sales where watershed analyses identify unstable and erosive areas, yet forest plans propose thousands of miles of new roads and millions of acres of logging on increasingly steep and sensitive slopes. In 1986, Montana's Water Quality Bureau reported that "accelerated road building and timber harvest on U.S. Forest Service lands now pose the greatest single threat to aquatic life."

Numerous watersheds and critical spawning areas have been devastated by intensive logging over the past 25 years, often with little economic return from the timber sales. The South Fork of the Salmon River in central Idaho, which once spawned most of the summer chinook salmon in the Columbia River basin, was the scene of massive landslides in the mid-1960s after intensive logging. The huge slumps smothered most of the river's spawning habitat and nearly wiped out one of the nation's most productive fisheries. Landslides also caused irreversible damage to the logged and roaded South Fork of the Trinity River in northern California's Shasta-Trinity National Forest. Sedimentation resulting from logging and roads in western Oregon has destroyed 50 percent of salmon habitat in the Siuslaw National Forest and has endangered salmon runs in the Siskiyou National Forest.

Forest plans typically give scant protection to water quality and fisheries. They ignore the causes and extent of past watershed degradation and rely on traditional Forest Service "best management practices" to minimize future damage. The inadequacy of these safeguards has been recognized by experts in the Environmental Protection Agency, state agencies, and professional fishery organizations. Continuation of such destruction will assure that productive fisheries and clean water are no longer sustainable outputs from the national forests.

Recreation, Scenic Beauty, and Roadless Areas. Destruction of scenic beauty and roadless areas represents the most serious threat to recreation opportunities on most national forests. Opinion surveys uniformly identify scenery as the most important factor in the public's choice of recreation areas to visit. And, in some regions, public demand for roadless recreation already far exceeds the ever-shrinking supply of roadless land.

The problems are already clearly evident in the southern Appalachians, Pacific Northwest, and elsewhere. The Forest Service plans to clearcut about 40 percent of the 3.5 million acres of national forest land in the southern Appalachians, despite widespread public opposition to the use of clearcutting in that region. Overall, 60 percent of the southern Appalachian national forests will be visually dominated by logging and roads. Forest plans designate more than 60 percent of the remaining roadless areas in the region for roading and logging, in spite of the fact that recreation demand will far exceed the capacity of existing wilderness lands.

In the Pacific Northwest, the threats to recreation are similar. On the Mount Hood National Forest in Oregon, lands dominated by roads and clearcuts will increase from 15 percent of the forest to 56 percent in the next five decades. On the Six Rivers National Forest in California, the proportion of management-dominated lands will increase from 7 percent to 54 percent. In Washington State, roadless recreation capacity on the Gifford Pinchot and Mount Baker-Snoqualmie National Forests will drop by about 40 percent in the next 50 years, while demand for this resource is expected to more than double on the Gifford Pinchot and nearly quadruple on the Mount Baker-Snoqualmie. Elimination of roadless lands and scenic beauty will also eliminate yet another forest resource that should be sustained.

### C. Economics

A final issue relates to the economics of the Forest Service timber sale program. According to the agency's new accounting system, nearly two-thirds of the national forests--about 76 of 120 forests--lose money on their timber sales. The Wilderness Society estimates that timber sale losses nationwide cost taxpayers on average at least

$406 million annually between 1982 and 1987. Below-cost timber sales are most prevalent in Alaska, the Rocky Mountains, and in the East.

Taxpayers are not only losing money on below-cost sales, but they are also subsidizing enormous environmental destruction on the national forests. Below-cost sales often occur on unsuitable lands--steep slopes, sensitive watersheds, unstable soils--where costly road construction may be necessary to access remote, generally low-valued stands. The result, as noted above, is considerable damage to ecological, recreational, and esthetic resources.

For the most part, forest plans do not attempt to correct the problem of below-cost timber sales. The NFMA directs the Forest Service not to sell timber on lands that are economically unsuitable. However, the agency's forest plans propose to increase timber sales on virtually all national forests that currently lose money on their timber programs.

## Major Recommendations

The concept of "sustainable forests" to provide biological, economic, and social continuity must be put into practice. This calls for a new forestry--a forestry with clear vision that heeds the value of biological diversity and incorporates the principles of conservation biology and ecology; a forestry that works with, not against, ecological processes.

The Wilderness Society has devoted much scientific and analytical effort to formulating policy reform for the national forests and U.S. forestry. These ideas are summarized and described in "New Directions for the Forest Service," released in February of this year, which I ask to have included in the hearing record.

"New Directions" puts forth a management regime and 72 specific recommendations that will direct the Forest Service to protect the biological integrity of the national forests and support appropriate development through sustainable forestry practices. Implementing the recommendations will also cause a reduction in annual spending on Forest Service programs from the current level of $2.5 billion per year to $1.8 billion per year.

Several key recommendations pertaining directly to Forest Service administration of the national forests follow.

1. Reduce the annual timber cut, now averaging 11 to 12 billion board feet per year, to a sustainable level of 5.0 to 6.5 billion board feet per year.

2. Adopt ecologically sound forestry practices, including curtailment of clearcutting.

3. Prohibit logging where prompt reforestation on cutover sites cannot be assured. Develop reforestation and reseeding programs that restore natural vegetation lost to logging and livestock grazing.

4. Prevent the degradation of pristine waters and fisheries and restore watersheds already degraded by past management activities.

5. Halt all construction of major access roads and cease other activities that fragment forestlands into small, isolated islands incapable of supporting the diversity of the larger forest. Roads also cause siltation of streams, harm wildlife, and ruin primitive recreation opportunities.

6. Stop cutting ecologically significant ancient forests in the Pacific Northwest until a valid inventory for the Pacific Forest Province is completed and Congress determines which areas warrant permanent protection.

7. Phase out taxpayer-subsidized, below-cost timber sales and adopt a pricing mechanism that allows the government to recover its costs of making timber available.

8. Protect critical habitat for rare, imperiled, and declining wildlife and fish species.

9. Establish a comprehensive network of biological reserves encompassing the different ecosystems found in the United States.

10. Reduce and reallocate spending; decrease the emphasis on commercialization in the national forests and increase emphasis on national forest resource stewardship and dispersed recreation, research, and private sector forestry.

Time prevents an in-depth discussion of the critical problem of global climate change and its likely impact on sustainable forests; forestry practices in turn have a major influence on global climate. I encourage the committee to keep this relationship in mind, however, and end by emphasizing that major changes in national forest policies and practices are required if our national forests are to be sustained in the 21st century and beyond.

## PREPARED STATEMENT OF FRANCES A. HUNT, FORESTRY RESOURCE SPECIALIST, NATIONAL WILDLIFE FEDERATION (NWF), WASHINGTON, DC

Mr. Chairman, members of the subcommittee, I am Frances A. Hunt, Forestry Resource Specialist with the National Wildlife Federation. NWF appreciates the opportunity to present our concerns regarding the management of our Nation's forests.

The National Wildlife Federation is the Nation's largest conservation/education organization, with over 5.8 million members and supporters in 51 States and territories. We have a deep interest in the proper management of our National Forests. We are concerned because these forests contain distinctive fish and wildlife habitat, wide ranging recreational opportunities, and provide other unique values that are generally not available on private forest lands.

The National Forests are therefore very special lands, and the law mandates that they be sustainably managed for the multitude of uses and benefits that accrue to all Americans, including future generations. Tension and conflict are inherent in such a mandate, and tension has always existed between commodity production and the conservation of noncommodity values on the National Forest System. As this pressure became more apparent in the late 1950's and early 1960's, the Forest Service turned to the concept of multiple-use to meet the many demands. As the Forest Service told Congress in a 1959 report, "Program for the National Forests," it would produce "more wood for the nation," "better hunting and fishing," "more and better water," "more outdoor recreation," and "better range."

This attempt to produce more of everything everywhere was doomed to failure from the very beginning. Timber has remained the prime revenue producer, and multiple-use has come more and more to be used as a way of explaining how maximum timber could be produced without undue effect on other values. Although in recent years, the agency has made noteworthy efforts to increase the emphasis on noncommodity resources, through such programs as the "Rise to the Future" initiative to improve fisheries, the overall emphasis on timber production has actually intensified.

The tension between commodity production and noncommodity values on the National Forest System has been driven to extreme levels in recent years due to the inability of both the Forest Service and Congress to reduce timber harvests to appropriate levels. This overemphasis on timber and other commodity values threatens the sustainability of our National Forests.

Over the last decade, the Forest Service has completed forest plans on most National Forests and has substantially expanded the role of both environmental assessment and public involvement programs as guiding factors for forest management. Despite the decade of forest planning and despite ongoing public outrage over agency timber harvest levels, Congress continues to fund, and the Forest Service continues to implement, a timber program that overwhelms other resource considerations. As many have observed, what the National Forest Management Act and the forest planning process have really given us is the best forest system possible absent real reform of the timber program. As long as timber production remains the dominant objective of the agency, as reinforced by the industry and the Congress, other resources will suffer.

In 1991 the National Forest System will be 100 years old. Shortly thereafter, we will be entering the 21st century. Both of these milestones provide the opportunity to examine the values and objectives that we wish to have emphasized on the 191 million acres of National Forests, nationwide. My statement today contains a number of examples of areas in which the Forest Service's increasing emphasis on timber harvesting or the production of other commodity resources, threatens the productivity of wildlife habitat or other noncommodity resources. Individually, each of these examples gives cause for considerable concern. Collectively, they beg the question of whether it is time to seriously reconsider the basic purposes for which we hold the National Forests in public management.

### PUBLIC WILL IGNORED IN NATIONAL FOREST MANAGEMENT

Although no public consensus exists among National Forest users regarding the purposes of the System and the mission of the Forest Service, one thing is certain. The commodity production vision which has guided the Forest Service during the last several decades no longer is acceptable to increasing numbers of Americans.

The urban nature of modern society has encouraged part of this change in attitudes. The loss of open space and associated opportunities for outdoor recreation near growing urban centers has led more Americans to look to National Forests to provide recreation opportunities: a trail to hike, a fast flowing stream to canoe, or a place to hunt and fish. Americans value the National Forests more for their recreational opportunities, their wildlife habitat, and the aesthetic enjoyment they provide, than for the number of board feet of timber that can be harvested each year. The National Forest System contains major portions of the last of the Nation's extensive areas of wild and natural land, places where primitive outdoor recreational opportunities still exist.

These changing perceptions about the values of the National Forest System arise because the resources which are most scarce, and most valuable today, are essentially different from what was scarce and valuable in the past. For example, mature, old growth softwoods and high-quality hardwoods are scarce and valuable; wood fiber is not. Biologically diverse forest ecosystems are decreasing; monocultural tree farms are common. For most Americans, places to seek solitude, to teach a child outdoor skills, to camp, to hike, or to simply enjoy the wonders of the forests are scarce; parks, zoos, trailer parks, shopping malls, highways, and concrete are not. In other words, the values which Americans seek from our National Forests have changed as our society has changed.

The Forest Service has been slow to shift its historical vision in light of this change in societal perceptions of the purposes of the System and its mission. The continued dominance of commercial interests and commodity production is clearly evident in the Northwest, for example, where the harvest of old growth timber moves rapidly forward against all logic.

## ANCIENT FORESTS OF THE PACIFIC NORTHWEST

In these rapidly disappearing old growth forests, the northern spotted owl has come to symbolize the controversy surrounding the future of the region's remaining ancient forests. As with any symbol, the owl represents a larger cause. The owl, which nests almost entirely in the tree-top cavities and broken snags of old growth forests, is dependent on the protection of these forests for its survival. It has therefore become the focal point for debates regarding the future of these magnificent forests.

Unfortunately, the attention focused on the owl has led to the characterization of the old growth issue as an "owls vs. timber industry jobs" debate. This oversimplification obscures a very basic truth: the environmental and economic health of the region are inextricably linked—one cannot prosper at the expense of the other. Forest management that is threatening the environment is also undermining the region's economic future, dependent not only on commodity values, but also on the quality-of-life accompanying a healthy and beautiful environment.

Currently, the region is being driven along an unsustainable course of timber-resource extraction. Outside of a limited acreage of ancient forests currently protected as parks and wilderness, old growth resources on private and Federal lands are being harvested at an alarming rate. Even if no additional areas are protected, the remaining volume of old growth timber—public and private—is simply too small to sustain the timber industry at current harvest levels.

Yesterday, at joint oversight hearings before subcommittees of the House Agriculture and Interior Committees, NWF President Jay Hair addressed the importance of protecting ancient forests. A copy of his remarks are appended to my statement.

## NATIONAL FOREST MANAGEMENT IN THE NORTHERN ROCKIES

The dominance of timber management is also readily apparent in the northern Rockies where timber harvest continues at record or near record levels despite massive problems with below-cost timber sales and significant environmental conflicts. Of 13 National Forests in the northern Rockies, 12 spent more on their timber programs than the government received in return for the sale of the timber, with the region as a whole losing some $22 million. These losses are made even more unacceptable by the fact that many timber sales cause significant environmental damage and compromise other resource objectives established through the forest planning process and by federal law.

At present, the Forest Service is under pressure from three directions to, at a minimum, sustain the current timber program. First, the timber industry, even as it liquidates timber reserves on private lands, is placing even more pressure on the agency to maintain or expand the harvest on public lands. Second, the Forest Service has traditionally been dominated internally by timber managers, and the agency has provided the timber program with larger appropriations and increased manpower. Finally, Congress, through the budgeting process, mandates an annual harvest on National Forest lands that conflicts directly with the achievement of other resource objectives.

Throughout the northern Rockies, the timber industry is arguing that the Allowable Sale Quantity (ASQ) set throughout the forest planning process is a floor that must be met and that the Forest Service has no discretion but to meet projected volumes. Under this pressure from industry, which is reflected in the Forest Service's annual budgeting process, the Forest Service line officers feel compelled to approve timber sales even where severe resource conflicts are revealed in the environmental review process. Two recent sales approved by the Forest Service provide examples of how the agency sacrifices wildlife values to meet timber targets, even in areas where both logic and law dictate other choices.

On the Panhandle National Forest in northern Idaho, the forest plan designated much of the Forest as priority habitat for the grizzly bear. This designation, referred to as Management Situation One (MS-1) grizzly bear habitat, establishes the maintenance and recovery of grizzly bear populations as the top management priority for these areas. In May, the District Ranger for the Bonner's Ferry Ranger District approved a timber sale at Brown Creek even though the Forest Service's environmental assessment (EA) disclosed that the management criteria for MS-1 lands would be violated. According to the EA, grizzly bear security guidelines would be reduced below acceptable levels, while further investigation disclosed that the evaluation techniques used to measure bear security were stretched in every instance to allow additional timber harvesting.

NWF believes there is an obvious solution to this and similar conflicts. The sale should be deferred until other timber harvesting activities in the immediate area have been completed. This staggering of sales will allow the maintenance of grizzly security. Nevertheless, this solution was unacceptable to the Forest Service because of pressures from the forest industry and a perceived mandate from Congress to achieve the timber goals set in the appropriations bill.

On the Beaverhead Forest, the forest plan established maintenance and enhancement of wildlife populations as a major management objective. But as the agency has moved forward with its timber program, wildlife conflicts have become increasingly apparent. Three National Wildlife Federation affiliates—the Montana Wildlife Federation, Skyline Sportsmen, and the Anaconda Sportsmen's Club—recently sued the Forest Service for failing to consider the potential impacts of the forest timber harvest program on big game, primarily elk. This lawsuit involves three sales in the lower Wise River drainage that are located within 2 miles of each other. Despite the close proximity of these sales, none of the environmental documents prepared by the Forest on the individual sales even acknowledged the existence of the other harvest activities.

Despite the clear failure to follow both agency guidelines and established case law under the National Environmental Policy Act to consider the cumulative impacts of timber harvest on wildlife, the Forest Service has ignored the cumulative effects of the lower Wise River sales, and has steadfastly pressed forward in its effort to harvest timber in the area. Thus, even though the local conservation groups tried to work with the Forest Service, they were ultimately forced to bring suit in federal court. This suit is currently pending before a federal district court in Montana.

The lower Wise River area, like many other areas on the Beaverhead, contains stands which—while being only marginal for timber production—are some of the finest wildlife habitat in the northern Rockies. While timber harvests can and should be allowed in some areas of the forest, the agency must provide a more careful assessment of—and management response to—the environmental conflicts that are brought to light by either the agency's own analysis or by outside parties. Presently, the agency's response is to ignore these conflicts and continue to harvest timber.

The National Wildlife Federation contends that ASQ levels must be a flexible target that can be modified when environmental problems become apparent. Where the agency is compelled, through political pressure or congressional mandate to meet unyielding harvest targets, there is little point in preparing environmental analysis documents, since their findings are largely ignored.

## BIOLOGICAL DIVERSITY THREATENED IN FLORIDA

Forest management decisions on the National Forests in Florida (the Apalachicola, Osceola, and Ocala) also bear the marks of a timber-dominated management philosophy. Here an overemphasis on commodity production is threatening biological diversity and the survival of various threatened or endangered wildlife species.

The longleaf pine stands (and associated wiregrass and other native ground cover) of the Apalachicola, Osceola, and Ocala represent one of the coastal plain's most biologically diverse and important communities. The area's wetlands also offer unique wildlife habitat. Although these forests are very significant biologically, timber management and harvesting can be conducted in a manner that provides both commodity and noncommodity values. After harvest of longleaf pine stands, for example, natural forest regeneration maintains biological diversity by providing habitat for the endangered red-cockaded woodpecker, the gopher tortoise, and song birds.

Nevertheless, although the plan for these three forests proposes to increase timber sale levels from 14.1 million cubic feet to 24.6 million cubic feet, there is no projected increase in the acreage of lands to be managed for red-cockaded woodpeckers, no increase in wilderness projections, and no long-term increase in dispersed recreation targets. On the contrary, the forest plan calls for extensive clearcutting, short timber rotations, ecologically unsound prescribed fire techniques, and other intensive mechanical site preparation techniques which will severely reduce the distribution and abundance of many native plant and animal species, including the already endangered red-cockaded woodpecker.

The plan's emphasis on commercial timber production—to the detriment of other resources—led the National Wildlife Federation, National Audubon Society, and several other groups to appeal to dodge administrative appeal in February, 1986. Although we may be close to reaching a settlement agreement with the agency, that settlement basically deflects (for further study and analysis) major issues regarding the protection of biological diversity rather than resolving them.

## SKI AREA DEVELOPMENT ON NATIONAL FORESTS

Timber management is not the sole commodity use of the National Forest System that threatens noncommodity values. For example, in many areas of the United States, proposed major downhill ski developments are vying for pristine National Forest land and the surrounding undeveloped private acreage. From Washington State to New Hampshire, these federal and private lands have been targeted for development—not by U.S. Forest Service planners, but by real estate speculators. For these speculators, converting national forests into downhill ski resorts is a ticket to considerable wealth.

Constructing a resort which may house between 10 and 20,000 residents on a site formerly used by eagles, elk, and an occasional ranching family has a cataclysmic impact on neighboring communities and their natural environment. While the Forest Service often seeks to divert attention from these impacts by insisting new ski developments consume only a fraction of National Forest Lands, that ostrich approach ignores the substantial off-forest development the federal permit triggers. No one can ignore, for example, the radical alteration of Colorado's Vail Valley subsequent to the Forest Service's ski development permit.

Although new downhill ski resorts have enormous impacts, we do not believe their creation is always bad public policy. Rather, a major problem is the Forest Service's unwillingness to conduct regional planning to ascertain which public land can support developed recreation by ten of thousands of people, and which should be protected for more bucolic pursuits and for its untrammeled resources. In region 2 of the Forest Service, for example, the operating rule seems to preclude ever saying no to any developer who can raise enough cash to finance a new ski area. Of the six proposed new major ski resorts in Colorado, all received preliminary approval study authority, or final approval. Those that failed faltered only for want of enough capital to float the investment scheme.

Unfortunately, the Forest Service's capitulation to the real estate/ski development speculators will have serious impacts on both the human and natural environment. For example, biologists in the Colorado Division of Wildlife assumed that wildlife displaced by the human growth caused by the Aspen and Snowmass ski areas in Colorado, could still move to undeveloped lands on the other side of the continental divide. Unfortunately, this assumption is now being jeopardized by another ski area developer, who has proposed a new ski area, Quail Mountain, on the Forest Service land that was to have been used by the wildlife displaced by Aspen and Snowmass.

New ski area development presents our country with an environmental challenge similar to the one we faced, but largely ignored, 50 years ago. Then, numerous major dam projects flowed off the drawing boards and into the agencies. Most of these dams are now complete, with little thought to the damage to commercial fisheries, wildlife, water quality, and the human environment. In this decade and the next, major new ski developments, each of which may destroy about the same amount of habitat as a large dam, present a similar challenge. The only difference is that with the new ski areas, it's not yet too late.

### ASSESSING THE MISSION OF THE FOREST SERVICE

Increasing conflicts between the management of commodity and noncommodity resources and values in our National Forests can be expected in the years ahead—if current management direction remains unchanged. Although no public consensus exists regarding the purposes of the National Forest System, it is apparent that the commodity-oriented vision which has guided the Forest Service during the last several decades no longer is acceptable to increasing numbers of Americans. These changing public values indicate that a reassessment of the mission of the Forest Service is in order. The Senate Agriculture Committee can and should take a lead role in this process.

Any debate regarding the purposes of the National Forests or mission of the Forest Service will lead inevitably to a discussion of how to make the changes that are needed.

NWF suggests the following questions be addressed as we reconsider the essential purposes the National Forests should serve, and the role of the Forest Service:

- What new values are the National Forests most likely to represent to Americans in the next century, and what will their priorities be?
- Should the role of the National Forests be amended to better address public priorities?
- Under its existing statutory mandates, can the Forest Service change its behavior to accommodate the changing expectations of the public for the National Forest System?
- How well has the mission, stated in the Multiple-Use Sustained Yield Act of 1960, guided National Forest management of timber, wildlife, range, water and outdoor recreation? Will the concept of "multiple-use," as understood and practiced by the Forest Service, be viable in the next century? Should timber management continue to dominate all other considerations of forest management, and consume over half the agency's annual budget?
- Are changes needed in the statutes governing the National Forest System, including the Multiple-Use Sustained Yield Act, the Forest and Rangeland Renewable Resources Planning Act, and the National Forest Management Act? Is a comprehensive new "Organic Act" necessary?
- Are changes needed in other statutes which affect National Forest management decisions, such as the 1872 General Mining Law, the Mineral Leasing Act, and the National Environmental Policy Act?
- What is the proper role of Congress—as it exercises both its authority to authorize agency programs and appropriate funding—in making forest management decision and allocations?

The National Forests are special lands, and our management of them should protect their unique qualities, while serving the needs and expectations of the American public. As the National Forest System moves into its second century, and the American society faces the 21st century, a new approach to management is warranted. Without attempting to predict which forest issues will make tomorrow's headlines, or how those issues will be resolved, we are convinced that a new vision of the future for our National Forest is needed.

National Wildlife Federation and other private conservation organizations, which have long played a role in helping define and articulate public attitudes, once again will be at the forefront of the movement to create a new charter for our National Forests. We urge the committee to take an active leadership role in this process.

[The appended prepared statement of NWF President Jay Hair follows:]

### PREPARED STATEMENT OF JAY D. HAIR, PRESIDENT, NATIONAL WILDLIFE FEDERATION, WASHINGTON, DC

Mr. Chairman, my name is Jay D. Hair, and I am President of the National Wildlife Federation (NWF). NWF appreciates the opportunity to present our concerns regarding the protection of ancient forests.

The National Wildlife Federation is the nation's largest conservation/education organization, with over 5.8 million members and supporters in 51 states and territories. We have a deep interest in the proper management of our nation's ancient forests. We are concerned because these forests contain distinctive fish and wildlife habitat, and therefore sustain populations of plants and animals that are found only in association with ancient forest ecological communities.

NWF is concerned about the protection of forests and associated habitat worldwide. Recently, considerable attention has been focused on the issue of tropical deforestation, particularly in the Amazon basin of Brazil. People worldwide are realizing that our natural ecosystems are deteriorating and the resulting loss of natural diversity may threaten the well-being of every resident of this planet. Interacting communities of plants and animals provide countless indispensable services, from the production of food, to the control of erosion, and the moderation of global climate.

The world's forests, for example, are a rich and largely unexplored source of medicines. The National Cancer Institute has made progress developing anticancer drugs from plants such as yew trees and mayapples found in temperate forests. Many potential medicines from plants, animals, and micro-organisms await discovery. Unless we choose to protect the biological diversity of natural forest ecosystems, we will eliminate new sources of food, medicines, and energy even before they are discovered.

Moreover, the conservation of the Earth's natural diversity and functioning ecosystems is essential for the protection of the global environment. Forests and other ecosystems help maintain the chemical composition of the atmosphere. New information regarding the part tropical forests play in controlling the global climate has generated reactions from U.S. citizens and others wishing to end the destructive clearing of these forests.

As our understanding and concerns regarding the greenhouse effect have grown, it has become increasingly apparent that the highly productive forests of the Amazon play a vital role in the cycling of water and carbon dioxide (a greenhouse gas) in the atmosphere. Unusually severe weather patterns and harsh droughts recently have reminded us how dependent we are on favorable climatic conditions for our survival on this planet. The destruction of natural forests and the air pollution we generate are contributing to a global experiment in atmospheric chemistry and climatology we neither fully comprehend nor control.

Currently, scientists estimate that perhaps 40 percent of all the world's tropical rainforests have already been logged, and some 15 percent of the Amazon rainforest has been destroyed. The National Wildlife Federation is working to halt this deforestation, and to help the citizens and governments of developing countries find ways to manage their forests in a sustainable fashion. Although the issues are complex, efforts to cooperate with these countries are yielding encouraging results. On April 6 of this year, for example, the President of Brazil announced a ban on the exports of raw timber from the forests of his country.

Even as the Brazilian government is reacting to international concerns regarding the destruction of the Amazon rainforest, our nation is rapidly eliminating the last of our ancient forests. This is an irony not lost on our South American neighbors, who respond to our efforts to reform their forest management practices, with blunt suggestions that we are preaching a double standard for our hemisphere.

The North American ancient forest stretches in an arc from the northern tip of the Alaska panhandle nearly to San Francisco, and has been undisturbed by man since the last ice age almost 11,000 years ago. These forests are dominated by large conifers ranging from 250 to over 1,000 years old. Twenty-five species of conifer can be found, in addition to numerous hardwood species, but Douglas-fir generally predominates in western Oregon and Washington, and ponderosa pine east of the Cascade Mountains, while the largest tree of all, the coast redwood, is dominant in northern California.

Although varying in species composition, old growth forests share three common characteristics. As explained in the book, *Secrets of the Old Growth Forest,* by David Kelly and Gary Braasch, these are:

*Large living trees and a multilayered canopy.*—Old and young trees grow together in a mixture of species. The large trees, 200 feet tall or more, have wind-damaged tops and relatively few large branches, with a thick growth of mosses and lichen harboring many insects, birds, and small mammals. These huge trunks often survive fires, for they are reservoirs holding thousands of gallons of water protected by thick bark. The uneven canopy is efficient at trapping moisture even from thin fog during drier seasons. Bacteria living on the leaves of certain lichens capture nitrogen, essential for plant growth, from the atmosphere.

*Large standing snags.*—Standing dead trees (snags) may stay erect for over 200 years. As their branches slough off, sunlight is able to reach the forest floor, allowing species that require light, such as Douglas-fir, to germinate. Insects and woodpeckers open up the dead wood, providing habitat for many other species. In turn, these become food for larger predators such as the northern spotted owl, marten, and black bear.

*Large down trees.*—Logs, 50 tons per acre or more in Douglas-fir stands, crisscross the forest floor, helping to hold steep soils in place. As they decay over a period of

200 to 500 years, dozens of species of insects, birds, and mammals use them for shelter or food. All this activity helps raise the concentrations of nutrients like phosphorus and nitrogen in the rotting wood, and the rootlets of nearby live trees tap them for food. These fallen trees also lie in random patterns in streams, and provide nutrients and habitat for a wide variety of bacteria, insects and fish.

Ancient forests are the richest, biologically and most complex ecologically of the forests in the Pacific Northwest. At least 118 vertebrate species find their primary habitat in ancient forest , more than in any other forest stage. Forty-one of these species find their primary nesting, breeding, or foraging grounds nowhere else. Often this is because they require some combination of these three old growth characteristics that are available only in ancient forests. The list of species whose dependence on old growth forests is most obvious includes the: bald eagle, marten, fisher, Sitka blacktailed deer, northern goshawk, northern spotted owl, marbled murrelet, and Pacific giant salamander.

Maintaining the long-term productivity of old growth and other forests requires the protection of certain basic properties of these ecosystems. Two such properties are *stability*, or the tendency to persist in the face of environmental variation such as climatic change, and *resilience*, the ability to recover following disruptive changes such as fire, windstorm, or logging. If we are to maintain the long-term productivity of our forests, we must protect both their stability and resilience.

The stability and resilience of a forest ecosystem are determined—in large part—by the biological diversity of that forest. This diversity can be measured at many different levels, including landscape variability, species composition, and the genetic variations found among individuals of a given plant or animal species. The complex interactions of these variables contribute to the healthy functioning of the environment and provide redundancy within ecosystems, providing both stability and resilience in the face of changing conditions.

Natural old growth forests serve as sources of species and genetic diversity, and as model sustainable systems that can be studied for insights into how to treat managed forests. Current forest management practices, on the other hand, lead to the loss of biological diversity within forests. For example, while natural forests may contain numerous species of unevenly-aged trees, both evergreen and deciduous, managed forests often contain only one or two even-aged species of trees. This ecosystem "simplification" diminishes the stability and resilience of these forests. and thus may impair their long-term productivity for a wide range of forest products: water, fish, wildlife, soils, recreation, scenery, and even wood fiber.

The significance of this loss of diversity, stability and resilience takes on added dimensions in light of predicted climatic changes due to the greenhouse effect. Established ancient forests will prove much more resistant to adverse effects in the face of climatic change than will plantations. The natural forests will also serve as the source of genetic diversity to provide trees capable of tolerating the warmer, drier climate that current models of global warming have predicted for the region.

We must bear in mind that 80 percent of the Northwest's forests already have been altered by human activities, and 85 to 90 percent of the original old growth forests are gone. The U.S. Forest Service and Bureau of Land Management have so far failed to assure that sufficient ancient forests will be protected to maintain their diversity and sustain their many values.

We cannot maintain this double standard for the management of global forest resources. The United States is not struggling with the pressing socioeconomic and demographic factors that are driving the destruction of the Amazonian forests. We do not have to clear our ancient forests to find homes for large populations of landless people, and the development of our economy is not dependent on the exploitation of these dwindling old growth forest resources. It is hypocrisy of the highest order to expect the Brazilians and other developing peoples to respect our admonitions to manage their natural resources wisely when we are unwilling to halt the destruction of much of the *last* 10 percent of our ancient forests.

Your two subcommittees can help the United States set the standard for forest resource conservation, and demonstrate to the world we are practicing the sound management we preach. There are solutions to our current ancient forest management crisis, and I urge you to give serious consideration to the recommendations of the other witnesses who will be outlining strategies for conserving these ancient forests.

TROUT
UNLIMITED

# Testimony
before
The Senate Subcommittee on Conservation and Forestry
of
The Committee on Agriculture, Nutrition and Forestry

June 21, 1989

Douglas E. McClelland
Federal Lands Fisheries Issues
Task Force Co-chairman
Trout Unlimited, Inc.

*America's Leading Coldwater Fisheries Conservation Organization*
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Statement of Douglas E. McClelland, Federal Lands Fisheries Issues Task Force Co-chairman, Trout Unlimited.

Mr. Chairman and members of the Conservation and Forestry Subcommittee, I appreciate the opportunity to share with the Senate Subcommittee on Conservation and Forestry the significance of the trout and salmon resources on forest lands managed by the U.S. Forest Service. I am from Bozeman, Montana, where I am a business law professor and development director for the College of Business at Montana State University. Also, in the summer I work part-time as a professional fishing guide.

From the perspective of Trout Unlimited's 63,000 members who work to preserve, protect, and enhance the coldwater fisheries of North America, the Senate has a unique opportunity to elevate the focus on fisheries resources of Forest Service managed lands. As a volunteer leader of Trout Unlimited I am privileged to fish for trout every month of the year. I often fish rivers on Forest Service land or rivers whose headwaters are on Forest Service land and I hope to have the privilege of doing this for forty or fifty more years. Like other volunteers in Trout Unlimited (and those in other fisheries conservation organizations) I have worked with the Forest Service, other agencies, and legislators to protect currently viable fisheries. I hope these oversight hearings will lead to an even stronger national effort to conserve one of our most unique renewable natural resources -- our coldwater fisheries.

We have been particularly pleased with Mr. Robertson's initiative, Rise to the Future. In the past fisheries and their watersheds have been degraded by unsound grazing, timbering, and mineral extraction practices. These land uses can be managed compatibly with fisheries. But, if they are not managed in harmony -- sediment, temperature elevation, nutrient depletion, non-natural water quality, and change in water flow patterns will continue to degrade our streams.

We need to realize the importance of our natural resources, and I would urge that special attention be given to our streams and lakes on Forest Service lands, as they are the integrating elements of our watersheds. We can wisely manage timber, grazing and other activities. From the perspective of the 60 million anglers who entrust the stewardship of these lands to the Forest Service, it is critical to give a high priority to managing sediment, canopy, water temperature, debris recruitment, access, and instream flows in order to seize the opportunity to protect and enhance our fisheries resources.

The following statistics are offered to illustrate the popularity of, and the need for, increased fisheries:

Need:

There are nearly 60 million anglers in the United States.
They spent nearly one billion days fishing in 1985.
DEMAND FOR ANGLING IS EXPECTED TO INCREASE BY 90% BY THE YEAR 2030.

Opportunity:

A. Aquatic systems
The Forest Service lands contain 128,000 miles of streams and 2.2 million acres of lakes, ponds, and reservoirs. Fifty percent of the trout and salmon habitat in the United States is in Forest Service managed waters.
B. Economics
Currently with 46.5 million angler use days of fishing on our national forests $1.21 billion is spent on angling and angling related activities. It is projected that just a 25% increase in anglers fishing on National Forests would increase angler use days by 11.6 million days and angling related expenditures by $303 million. In addition to sports angling, Forest Service managed waters produce 118 million pounds of salmon and steelhead with a commercial value of $123 million. With additional funding, the harvest production could be increased to 190 million pounds which would have a commercial value of $229 million.

The Forest Service has been a leader in meeting the public's fishing needs. To further commend the Chief on his Rise to the Future program, let me note a few of the last two years' accomplishments of the program.

*From March 1987 to May 1989 the number of Forest Service fisheries biologists has increased from 112 to 211. The Forest Service fisheries budget has also doubled from FY 1987 to FY 1988.

*In FY 1988 the Forest Service's partnership fishery programs received $754,000 from the Federal Budget and this amount was matched by $2,173,181 in private sector contributions of money, equipment, and labor, resulting in the completion of 3,737 fisheries habitat improvement structures and the improvement of 2,197 acres of lakes and ponds in 28 states.

*A formal national partnership agreement was signed with Trout Unlimited and two other fisheries conservation organizations. The Forest Service has also signed specific state partnership agreements with Trout Unlimited Councils in Arizona, Colorado, Kentucky, Michigan, Montana, North Carolina, South Carolina, Tennessee, Utah, Virginia, and Wyoming. Similar agreements are pending in California and Oregon.

*New trout and salmon research units were established in Blacksburg, Virginia and Laramie, Wyoming. Additionally, the research efforts in Boise, Idaho were expanded and warm water research stations were established in Oxford, Mississippi and Rhinelander, Wisconsin.

These accomplishments show a new commitment to fisheries management. There are still areas of concern which need to be addressed.

*Many of the Forest plans need amending to include stronger language to protect and improve fisheries.

*Forest plans show a need for 400 biologists to accomplish fisheries goals. Many of the plans were developed with little or no fisheries input, so it is likely more than 400 fisheries biologists are needed. These biologists are critical for planning forest activities. There is also a need for hydrologists and geomorphologists to evaluate proposed land uses with the primary objective of maintaining stream stability and fisheries protection.

*The Forest Service's Rise to the Future Program needs to be funded at a level of at least $24 million for FY 1990. This is double the amount in the President's budget, but it is still less than the amount needed to bring the fisheries program into its proper balance with other Forest Service programs.

*There needs to be increased emphasis on fisheries research to develop a better understanding of fisheries methods, sediment impacts, productivity, channel response to flow alteration and instream habitat work, and woody debris needs, along with a number of other areas. In the Southeast where the brook trout's range is severely reduced by man's activities there is a special need for accelerating research to protect and enhance brook trout productivity through improved riparian zone management. Also, scientists need to understand the effects of sedimentation on trout productivity. This $500,000 research need is important to this species in the southern extreme of their range.

*There needs to be increased emphasis on restoring the habitat of the interior cutthroat trout. There is only four percent of the historic range still supporting cutthroat trout. Their range could be greatly expanded by the Forest Service leading a highly visible coordinated management effort among the federal and state agencies to restore the cutthroat habitat.

Beyond these needs, in many parts of the nation trout and salmon are dependent on Forest Service managed waters. In the Northeast, many of the headwater streams which provide important nursery habitat for Atlantic salmon are on Forest Service lands. In the Southeast, most of the publically accessible land with trout habitat is managed by the Forest Service. Although forestry is a very big industry in this area, especially in Georgia, forest management practices must provide protection for streams or we will witness the demise of the native brook trout. In the Midwest, as elsewhere the public demand for fisheries is rapidly growing and forest managers must be able to increase the productivity of their fishable waters. In the West and Southwest, the forested lands are increasingly providing a valuable economic base because of their excellent fisheries and their recreational opportunities. The West Coast and Alaska forests provide trout and salmon for many users, including a significant commercial fishery. These resources vary in specific attributes, but the trout and salmon in them represent a valuable national heritage and renewable resource.

In closing, I offer the assistance of Trout Unlimited in gathering information concerning specifics about trout and salmon and their habitat on any of the forests, that would be of interest to this Subcommittee. Trout Unlimited looks forward to working with you, the Forest Service, private forestry concerns, and others to improve forest practices to protect our fisheries. Thank you for the opportunity to testify.

I would be pleased to answer any questions.

## ATTACHMENT

To further show the Forest Service's commitment to fisheries habitat improvement, I am pleased to share with this subcommittee a list of Trout Unlimited and Forest Service partnership projects over the past two years.

| NATIONAL FOREST | ENHANCEMENT |
|---|---|
| 1987: | |
| Gallatin | Yellowstone River habitat evaluation |
| Idaho Panhandle | Pool structure deflectors |
| Medicine Bow | Bank stabilization and cover development |
| Rio Grande | Reservoir Dam repairs |
| San Juan | Log check dams |
| White River | Log check dams<br>Fisherman access maps, Rock structural placement, Trash removal, Willow planting |
| Tonto | Fence stream, 75 Instream structures, Riparian habitat plantings |
| Apache-Sitgreaves | Ten instream structures |
| Uinta | Streambank rehabilitation |
| Wasatch-Cache | Stream rehabilitation |
| Toiyabe | Instream structures |
| Ashley | Stream barrier removal |
| Mount Baker-Snoqualmie | Log weirs, Deflectors, Digger logs |
| Daniel Boone | Instream structures |
| Chattahoochee-Oconee | Macro invertebrate sampling, Instream structures, Debris removal |
| Cherokee | Aquatic habitat restoration |
| George Washington | Stream structure inventory |
| Sumter | Trout habitat studies |
| Nicolet | Bank cover installation |
| Monongahela | Flood damage repair |
| Huron Manistee | Bank stabilization, Habitat mapping |
| 1988: | |
| Lolo | Habitat improvement |

| | |
|---|---|
| Arapaho-Roosevelt | Habitat development, Handicap access |
| Medicine Bow | Habitat improvement, Handicap access, Bank stabilization |
| San Juan | Bank stabilization |
| Apache-Sitgreaves | Habitat improvement |
| Tonto | Riparian plantings |
| Bridger-Teton | Habitat improvement |
| Cherokee | Habitat enhancement, Channel and pool development |
| Chattahoochee-Oconee | Habitat improvement, Access improvement, Bank stabilization, Habitat evaluation |
| Daniel Boone | Insect productivity improvement |
| Francis Marion-Sumter | Productivity and population survey |
| George Washington | Stream survey, Habitat improvement |
| North Carolina | Channel construction, Habitat improvement, Handicap access, Habitat protection |
| Ouachita | Stream analysis, Creel survey |
| Ozark-St. Francis | Habitat improvement |
| Allegheny | Habitat improvement |
| Hiawatha | Habitat improvement, Sediment basin development |
| Nicolet | Habitat development |

Statement of Walter Jarck
Corporate Director of Forest Resources,
Georgia-Pacific Corporation
Atlanta, Georgia

Before the Senate Committee on Agriculture, Nutrition &
Forestry, Subcommittee on Conservation and Forestry

June 21, 1989, Hearing on Sustaining Forest Resources

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I appreciate the opportunity to appear before you and present the views of Georgia-Pacific....views that are generally shared by a preponderance of the industrial forest landowners.

In the 5 minutes allotted, I will discuss the south's timber situation and forecasts, discuss the replanting efforts and the impacts of good forestry on both timber supplies and wildlife. I understand the other regions of the country will be covered by experts from those areas.

Georgia-Pacific is a national corporation operating 46 sawmills, 19 plywood plants, 28 pulp and paper mills, 4 OSB panel plants and 152 distribution centers. Our forestry operations include approximately 6 million acres of managed timberlands, seed orchards, nurseries, and state of the art expertise to grow approximately 50% of our needs. About 4 million acres are in the south as are a majority of our plants. We employ 44,000 people. Since the logging, tree planting, road construction and other tasks are contracted, the multiplier effect from seed to lumber, paper and plywood delivered to the consumer is extremely beneficial to many rural economies as well as nationally.
Georgia-Pacific's corporate objectives for timber management are threefold: (1) to grow timber products of size and quality to optimize production in the wood using plants; (2) to make the maximum use of each tree harvested and to make each tree harvested produce maximum cash flow; (3) to accelerate the growth cycle and to increase the volume grown per acre. It is Georgia-Pacific's aim to accomplish these objectives while occurring the minimum negative impacts to the environment. All industrial landowners share similar objectives. As an ownership class, industrial forest land is well managed and yields higher volumes of wood-fiber than the other ownership classes.

I mentioned Georgia-Pacific grows about 50% of its timber or fiber needs, and purchases the remaining 50%. Some companies own very little land and rely totally on open market purchases. The timber is purchased from the independent private landowners who own approximately 67% of the south's commercial forests. It is this source that makes the south so competitive. Because these landowners have different motivations for growing timber and owning their land, they provide a diverse number and kinds of products from biomass and fuel, to pulpwood chip-n-saw logs, plylogs, sawlogs, hardwood sawlogs, pine needles, fish and game.

They range from owning a few acres to many thousand, from living on the tree farm to living thousands of miles away. Some are farmers, some retired, some blue collar, some professional and white collar. Industry provides the markets, these small landowners provide most of the resource, making this system unique and competitive. In fact, the South is the nation's low cost producer of forest products as a result. We need each other for this to happen.

Lately however, we are witnessing a lack of willingness of these landowners to reinvest in new stands of trees; many are liquidating. I am also concerned that the 1986 Tax Reform Act is causing even more to not spend any money on restoring their cutover lands. System was working fairly well and was improving. The 21 million acres of planted forests in the South can attest to this. What we do not need is additional legislation limiting the options landowners have.

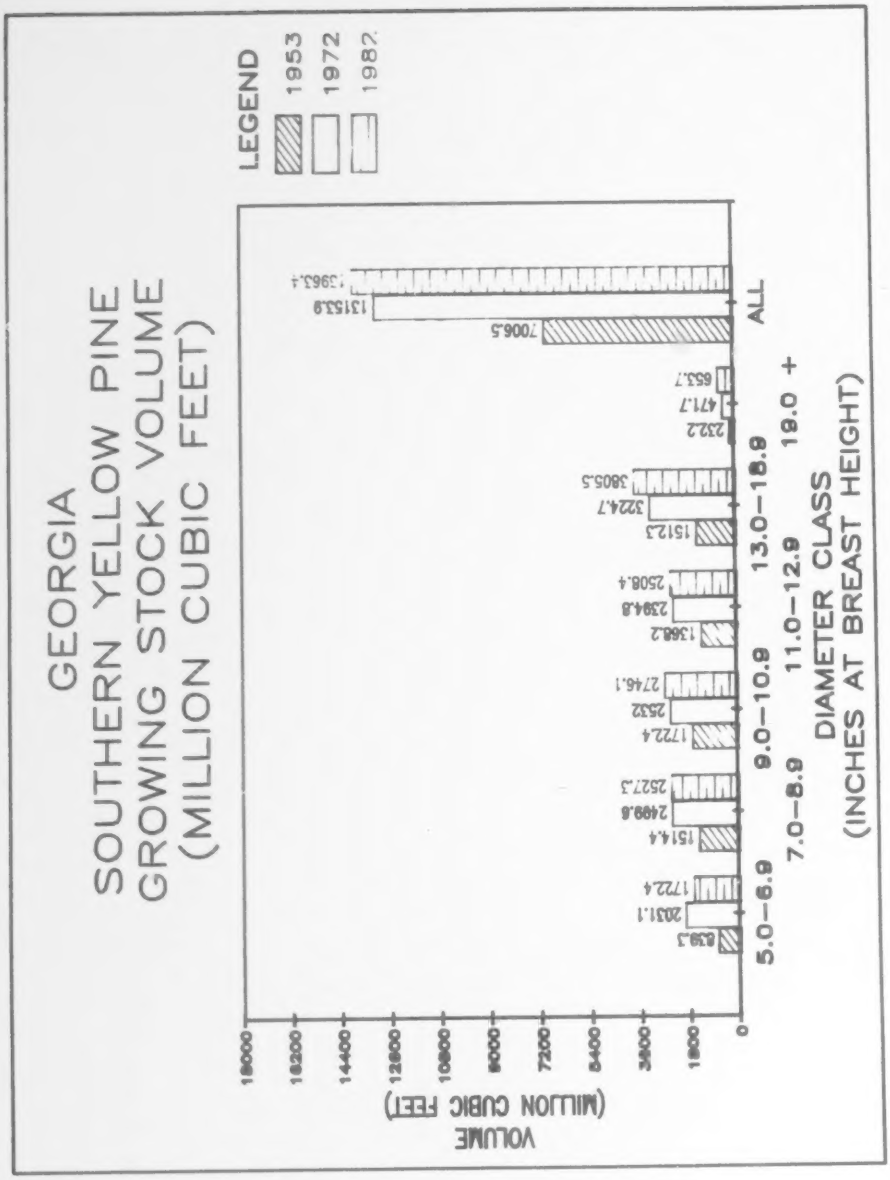
Those of us who are long term forest planners in the industry are concerned with future supply. We have sufficient supplies of timber growing at the present time, but are concerned with the next generation of trees that should be germinating or should be planted now. I have a graph that will show that the inventory of pine growing stock in Georgia has increased between 1953 and 1982 (enclosed). It shows that Georgia has almost doubled the pine growing stock (cubic feet) in this 29 year period. Similar studies in other states in the south show the same results. However, many pine stands owned by individuals presently being harvested are not being planted back or being regenerated for several reasons. High on the list are the tax changes, risks of not being able to harvest because of environmental reasons and lack of information of forestry in general.

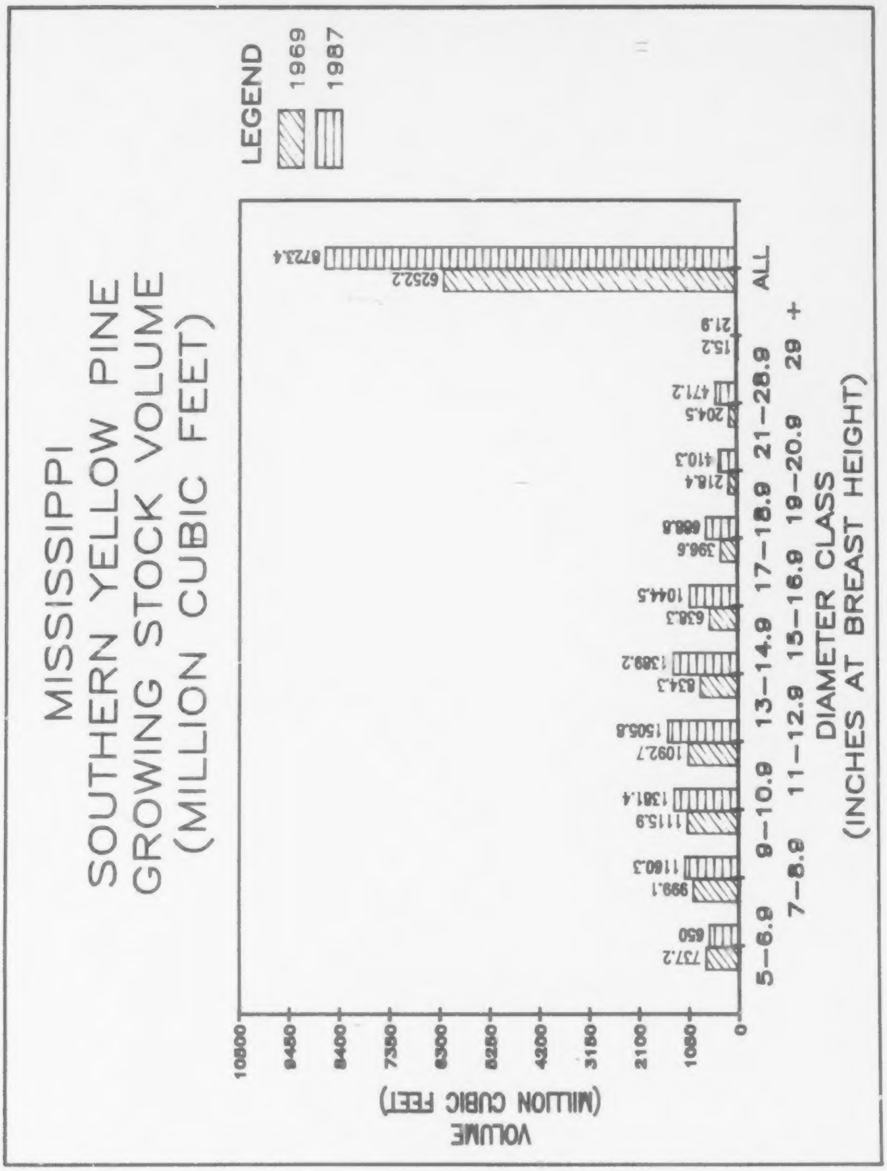
Senator Fowler, during the recent tax hearings, you held in Macon, Georgia, you specifically asked me about wildlife. I answered that good forestry is also good wildlife management. A regulated stairstep forest with varying age classes offers excellent biological diversity. It offers continual habitat for both game and non-game species. It provides cover and forage for those that favor openings, as well as those that prefer varying types of canopy. Hunters tell us they prefer intensively managed company lands because of the greater game populations that are sustained over a longer period of time.

I pointed out earlier that forest industry lands are primarily managed for timber production with wildlife being a secondary benefit. Other landowners may wish to manage for both and with different priorities. It should be the landowner's option. Encouraging landowners to conduct good multiple use forestry on their lands will also generally encourage good wildlife management. Multiple use will provide the greatest benefits, not only to the public who are the users, but also to the owners, the benefactors.

I urge you and your colleagues to work toward provi~~d~~ding the southern landowners with the level of playing field to encourage timber management to sustain the jobs, local mill economies, clean air and water, and wildlife that these forests provide. Do not write laws that encumber good management or good decision making on these lands. Encourage the elimination of such counter productive moves as the Tax Reform Passive-Active Loss rules which are turning off tree farmers. Encourage educational programs and technology transfers to get the word out on better management practices and the financial benefits of regenerating and timber stand improvement practices. I ask you to work to keep us competitive on both the domestic and world markets. By sending signals that encourage investment for good forestry you will assure that southern timber growers will have excellent markets for their timber products, the industry will have sufficient future supplies, and the public can enjoy the recreational and intrinsic values that come from multiple use.

Thank you,
W. Jarck


GEORGIA
SOUTHERN YELLOW PINE
GROWING STOCK VOLUME
(MILLION CUBIC FEET)
LEGEND
1953
1972
1982
VOLUME
(MILLION CUBIC FEET)
0
1800
3600
5400
7200
9000
10800
12600
14400
16200
18000
839.3
2031.1
1722.4
1514.4
2489.6
2527.3
1722.4
2532
2746.1
1368.2
2384.8
2508.4
1512.3
3224.7
3805.5
232.2
471.7
653.7
7006.5
13153.9
13963.4
5.0–6.9
7.0–8.9
9.0–10.9
11.0–12.9
13.0–18.9
19.0 +
ALL
DIAMETER CLASS
(INCHES AT BREAST HEIGHT)


MISSISSIPPI
SOUTHERN YELLOW PINE
GROWING STOCK VOLUME
(MILLION CUBIC FEET)
LEGEND
▨ 1969
▥ 1987
VOLUME
(MILLION CUBIC FEET)
0
1050
2100
3150
4200
5250
6300
7350
8400
9450
10500
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650
999.1
1160.3
1115.9
1381.4
1092.7
1505.8
834.3
1389.2
638.3
1044.5
396.6
688.8
218.4
410.3
204.5
471.2
15.2
21.9
6252.2
8723.4
5–6.9
7–8.9
9–10.9
11–12.9
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15–16.9
17–18.9
19–20.9
21–28.9
29 +
ALL
DIAMETER CLASS
(INCHES AT BREAST HEIGHT)

## Testimony of Bruce R. Miles, president-elect of Forest Farmers Association[1]

My name is Bruce R. Miles, and I am testifying as president-elect of the Forest Farmers Association. Headquartered in Atlanta, Georgia, the association has 3,000 members representing private forest landowners across the South. I am also the State Forester of Texas and Director of the Texas Forest Service.

My purpose today is to express the concerns of private landowners in their efforts to grow timber for the nation's needs in light of recent environmental and taxation regulations. A concern for regeneration, both artificially and naturally, in light of increased harvesting should also be paramount to this committee.

Preservationists' impacts through appeals, court cases, and endangered species as surrogate issues are not confined to the national forests.

### Environmental Impacts

#### RCW

As a result of U. S. District Judge Parker's ruling, 200,000 acres, about 1/3 of the National Forests in Texas, are now being managed exclusively for protecting the red-cockaded woodpecker (RCW). But there is more.

This fiscal year timber sales planned for the National Forests in Texas totalled 115 MMBF of green timber valued at approximately $14 million. Of that amount local governments should receive one-quarter. Due to the court ruling, all previous work on long-range plans and timber sale preparation has been disregarded on the entire 600,000 acres. On top of this are appeals by environmentalists on everything the Forest Service does outside the 200,000 acre RCW lands. The net affect has been a drop in timber sales to an estimated 30 MMBF of green timber this fiscal year. Payments to local governments are down about 50% from where they were 2 years ago.

This affects mid size sawmills which in turn affects the private landowners sources of markets. Its impact on the entire forest economic picture is real. One timber sale of $400,000 on a state forest was cut in half in deference to the woodpecker habitat requirements.

Southern pine beetles (SPB) are again on the rise in Texas and Georgia. Back in 1985-1986 Texas experienced the worst outbreak on record. Much of the severity of that outbreak was attributed to Four Notch, a 4,000 acre part of the Sam Houston National Forest.

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[1] Mr. Miles is also Director of the Texas Forest Service and State Forester of Texas.

Because of environmental pressure and the RARE II process, control of SPB infestations were allowed to expand to extremes. As a result, infestations spread over private lands to nearby counties. Timber prices plummeted as mills flocked to cheap salvage timber on the National Forests. At one point in time, beetles were killing trees in Four Notch at the rate of 50' per day on a three-mile front.

Similar destruction was experienced on units of the Big Thicket Preserve, 85,000 acres of former commercial timberland purchased by the federal government in 1985 to preserve unique biological communities. Much of the pine forest on these lands was destroyed in the 1975 SPB outbreak. Again in 1986 much of the remaining pine stands were destroyed.

SPB has no respect for boundaries. When these high populations build up on federal land, they quickly spread to adjacent and nearby private tracts.

In 1974 Congressman Wilson of Texas said that 86,400 acres for the Big Thicket Preserve was enough. Today he is advocating an additional acquisition of 16,000 acres for the preserve. Add to this 35,000 acres of the National Forests taken out for wilderness areas and now 200,000 acres to be managed for RCW, it all means a significant reduction in the ability of a major forest resource-based economy to sustain itself. There are now 91 million acres in the system and only 61 million of National Forests left suitable for timber production. Above the timber supply concern is the major concern of private landowners - that of private property rights.

- **Mitigation for Lost Timber Production**

Federal laws provide for mitigating losses in wildlife habitat but nothing to date has been done to mitigate the timber losses due to wilderness, endangered species protection programs or other set-asides. Local timber economies may be the true endangered species. National policy makers need to become very serious about our abilities to meet future timber needs when we will mainly depend on private timber. Policy in the past has focused entirely on federal land. Whatever happens on private lands is taken as a state responsibility.

It is difficult to sell large investments of state general revenue in timber production on private lands since state coffers don't share directly in a percentage of th income as does the federal governments. The exception being small amounts of severance tax revenue some states collect.

**- Water Quality**

Most environmental entities perceive forested watersheds as the last vestige of clean water, and perceive timber harvesting, clearcutting and road building as major pollutants. Research doesn't justify this concern. However, state forestry agencies will cooperate with industry and the water quality agencies to implement "Best Management Practices". State forest agencies with limited funds will not have any added funding to implement these strategies.

**- Wetlands**

Bottomland hardwoods are targeted by the federal Fish and Wildlife Service and state game agencies as priority wetlands for preservations. Forest Farmers believes that forested wetlands are an important national resource and deserve special attention. We also believe that the viability of these forested ecosystems can be assured through implementation of best management practices that will perpetuate environmental values as well as timber production. These lands should stay in private ownership and adequate incentives and technical assistance provided the owners to keep these lands productive and on the tax roles.

Private landowners are also concerned about capital gains taxation. Capital gains is more justified for PNIF than any other form of capital investment. Tax incentives, whether it be expensing operating cost, reforestation tax credits or capital gains treatment of timber income, are all important to draw private capital to producing timber for future generations. Timber production on a scale sufficient to meet society needs is very expensive and requires a cooperative approach between public and private interest. All parties benefit and all parties should share the cost.

Landowners' investments in long-term high risk activities must be accorded more equitable taxation. Timber investments, because of their long-term nature, are totally destroyed by inflation when taxed like ordinary income. There has to be provisions for market uncertainties and natural risks. In Texas we frequently experience drought conditions that can render a reforestation investment worthless overnight. It is not unusual for 15-20 percent of our plantings to fail annually with some lands having to be replanted two or three times.

Southern pine beetle poses very costly losses for private landowners who tend to hold timber longer for higher valued sawlog production. In 1976 there were 16,000 infestations in Texas. They are back again this year.

Market uncertainties are very real. In 1979 sawtimber in Texas sold for $250 MBF, in 1985 prices dropped to $100 MBF, and today it brings $150 MBF.

Capital gains uncertainties cause people to hold timber off the market at times when it should be thinned to improve vigor to resist SPB.

Passive loss is another concern of the private landowner. Present tax law will require many landowners to carry today's operating costs many years to the future before they can be charged against future income. Consider timber's very long production cycle. Periodic thinning in mature timber should only be conducted once in ten years. At today's low inflation rates carried ten years, will reduce the value of the deduction for costs by at least half, a tremendous disincentive for investments to grow trees.

The passive rule "hours test" must be changed to allow deductions for operating cost in the year they occur. The present law is very confusing and leaves landowners very uncertain about their tax liability.

- **Resource Trends Disturbing - 1975-1985**

Timber harvest in Texas exceeds growth for first time since turn of the century. Pine harvest exceeds growth by 3 percent.

Timber harvest increased 44 percent.

Growth of pine and hardwood has fallen off and mortality more than doubled.

Less than half the pine forest harvested on nonindustrial lands successfully regenerate to pine.

- **The private land approach to resource development to ensure future timber supplies.**

In 1915 when the Texas Forest Service was established, state policy leaders were confronted with a cutover depleted forest resource base. They had the option to acquire this land base and develop a public forest which many states opted to do. The option selected was to leave this land in private ownership and provide support, protection and development assistance to encourage private landowners to reforest their land. Back in 1929 Texas timber inventory declined to 10 BBF, today it has recovered to 37 BBF and timber harvest rivals historic peaks. The state resource protection and development program cost the taxpayers 12 million/year. Compare this to the National Forest budget in Texas of $14 million for a land base that generates only 8 percent of the harvest.

The decision is 1915 to help private landowners hang on to their land and develop this resource has proven to be very effective. Government leaders need to reexamine the programs and government roles that contributed to this success.

## - Key Initiatives

Resource education

CFLOA landowners learn best by example and motivation of seeing successful results from other local landowners. There is much help available from landowners themselves in shaping public policy decisions at all levels of government to help keep timber production a viable economic opportunity for landowners.

The TFS organized 19 county landowner associations that today have an aggregate membership of over 2,000 landowners. These associations represent all the major timber counties in Texas. They represent 160,000 landowners much more effectively at the local level than any other mechanism to date.

## - Key Programs

Reforestation incentives FIP/TRe

In 1974 USDA developed the federal incentive program to provide cost-share assistance with reforestation. Response was overwhelming. In 1980 to help relieve the backlog in demand, the forest product firms in Texas organized the Texas Reforestation Foundation (TRe) which operates through TFS/TFA much like FIP. Both programs together provide approximately $800,000/year to match landowners' costs to reforest. This has resulted in planting 25,000 acres/year. We need to be doing 75,000 acres/year.

CRP

Been great for many Southern states; not much in Texas. Hope marginal pasture comes through 1990 Farm Bill. There are over 2 million acres of erosion-prone pastureland that would be more productive in timber.

## PREPARED STATEMENT OF MARK E. REY, VICE PRESIDENT, PUBLIC TIMBER PROGRAMS, NATIONAL FOREST PRODUCTS ASSOCIATION, WASHINGTON, DC

### I. INTRODUCTION

Good morning, my name is Mark Rey. I am vice president of public timber programs with the National Forest Products Association (NFPA) here in Washington, DC. NFPA is a national trade association of forest landowners and forest products manufacturers. Many of NFPA's members are dependent in whole or in part on the national forests or other public lands for their raw material supply.

My role on today's panel is to review the present status of the national forests timber management program, as well as to discuss some major issues affecting management of the national forests and the timber supply available to those of our members who cannot exist without Federal timber.

### II. NATIONAL FOREST TIMBER SUPPLY—AN IMMEDIATE CRISIS, GROWING WORSE BY THE DAY

#### A. OVERVIEW

The Nation's forest products manufacturers depend upon a sustainable, renewable resource to meet growing demands for wood and paper products. The United States is fortunate to have abundant forest resources which are actually increasing over timber production in most regions of the country. U.S. commercial forest land contained over 830 billion cubic feet of growing stock in 1987, 4 percent more than a decade earlier.

Even with this vast and growing resource base, the forest products industry faces a timber supply crisis. This crisis is unlike any faced in this century. Trees are in the ground, and growing. But the industry, increasingly, is finding itself unable to use them.

The problem is particularly acute in the Western United States where most of the standing softwood sawtimber inventory is on publicly owned forest land. The national forests contain 50 percent of the Nation's softwood inventory but provide only 25 percent of the annual harvest. However, the crisis in the West is rapidly spreading throughout the country.

#### B. DIMENSIONS OF THE PROBLEM

Present supply limitations are particularly acute because of strong market demand for wood products. Through the mid-1990's, the average annual U.S. consumption of softwood lumber is projected to be in the range of 45-47 billion board feet (BBF) per annum. This is very high by historical comparison. By contrast, the highest demand year in the decade of the 1970's was 42 BBF.

Exports of finished wood products have also been growing at a record clip. The volume of wood exports jumped 33 percent last year. Moreover, imports declined by 4 percent, to under $5.4 billion, reducing the wood products trade imbalance to less than $100 million, from over $1.5 billion in 1987. This is a positive development which underscores our country's potential to become a net exporter of wood products during the 1990's. Perhaps more importantly from an environmental standpoint, this will occur in a global market so starved for fiber that large parts of the world are being deforested to meet this need.

But where will the raw material come from in order to meet the high domestic demand and growing export opportunities? While existing inventories and net annual growth are adequate, progressively less timber is remaining available—or being made available—for timber production.

#### C. CRISIS ON THE NATIONAL FORESTS

Timber from National Forests is vital to meet domestic demand and fulfill the U.S. industry's potential to be among the premiere suppliers of wood and paper products to the world. And while the Forest Service timber sales program has increased slightly during the past few years, the increase has not kept pace with rapidly increasing harvest levels, including record harvest in each of the last 2 years. Harvests have exceeded sales each year since 1984. Consequently, volume under contract has been rapidly depleted, dropping each of the last 5 years. It now stands at its lowest level in history.

At the same time, the Forest Service—for a number of reasons, including staff reductions triggered by the timber buyout in 1984—has fallen behind in preparing timber for sale. The timber sale "pipeline" is, therefore, nearly drained.

The situation has been exacerbated by appeals and litigation—increasing at a rate in excess of 100 percent over each of the last 6 years—which delay or otherwise encumber sales already in the pipeline. The rapidly increasing number and complexity of national, State, and even local environmental group appeals and litigation have further reduced or delayed available sales offerings. Presently, over 2.3 billion board feet (BBF) of Federal timber sales are enjoined, with another 1.5 BBF in immediate jeopardy. While the northern spotted owl accounts for a large portion of this impact, it is only a part of a larger picture of appeals and litigation designed to stop the sale of Federal timber. Even rapidly deteriorating, fire-damaged timber now over 2 years since the fires is still being kept from salvage by appeals and litigation.

But this is by no means a purely western phenomenon. The Forest Service shows every indication of collapsing under Sierra Club pressures for unduly restrictive management guidelines for red-cockaded woodpeckers on 14 coastal-plain National Forests in 8 Southeastern States. The Wilderness Society has embarked on an aggressive program to reduce or eliminate timber management in the southern Appalachian National Forests.

The results include closed or curtailed mill operations, lost jobs, foregone opportunities to sell U.S. products overseas, and reductions in county revenues and school budgets that had depended on Federal timber receipts. Since the middle of 1988, 30 mills have closed in Oregon, Washington, California, Idaho, and Montana due to a lack of raw material. There is simply no historic precedent for the suddenness, extent, and severity of this situation. With the specter of even more widespread mill curtailments on the horizon, there is a crying need for some sort of immediate action to avoid economic disruptions on at least an interim basis. Moreover, it is time to begin the process of evaluating longer term solutions to the frustrating question of defining the proper contribution of the National Forest System to the country's and the world's timber supply needs.

## III. THE FOREST SERVICE'S TIMBER SALE PIPELINE—DRYING UP QUICKLY IN THE FACE OF FUNDING CONSTRAINTS AND ENVIRONMENTAL CONTROVERSIES

During the last 4 years, the Forest Service has faced increasing pressure in maintaining an adequate flow of timber volume given market demand, funding constraints, and environmental controversies. Even though the Agency has experienced rapidly rising timber sale preparation costs in the face of environmental conflicts and new environmental requirements, funding levels needed to maintain an adequate flow of timber have been inadequate. It generally takes 7 years to complete all of the forestry and environmental tasks necessary to bring a timber sale to the point it is ready to offer for auction.

As a consequence of these constraints, the Forest Service no longer has its targeted timber sales volume ready to offer at the outset of the fiscal year. Compared to the historic pattern of having all of this volume ready to offer at the outset of any given fiscal year, the Forest Service entered FY 1989 with only 48 percent of the proposed sale target prepared and ready to sell. In some regions the situation is significantly worse, with the Agency literally living from hand to mouth in an attempt to move timber through the preparation pipeline to offer it for sale in order to meet appropriated timber sale targets.

### A. ELEMENTS OF THE CURRENT PROBLEM

The problem of the timber sale pipeline drying up is a consequence of three major factors.

First, the Agency has spent the equivalent of 6 months of staff time over the last 2 years fighting fires during extraordinary fire conditions instead of preparing timber sales so that they might be ready to offer during FY 1989 or FY 1990. As a consequence of the time lost to fight the California and Oregon fires in 1987 and the Montana, Idaho, and Yellowstone fires in 1988, the Forest Service has fallen dramatically behind in the preparation of timber sale volume. Given the manpower available within the Agency, it is highly unlikely that the Agency will catch-up even if 1989 proves to be a wet year with minimal fires. Current weather conditions suggest that 1989 might well be another difficult fire year in a large portion of the West.

Additionally, the Agency experienced relatively low unit costs for timber sale preparation during the mid-1980's as a consequence of the availability of sales that were returned to the government under the provisions of the Federal Timber Contract Payment Modification Act of 1984, and subsequently resold later in the decade. These reoffer sales were easier to prepare. Thus, the Agency experienced lower unit costs during this period when reoffer sales made up a substantial portion of region 5 and region 6 timber sales program.

Resales are no longer available. Consequently, to offer the same amount of volume overall, Agency unit costs have increased dramatically. Funding restrictions during FY 1988 and FY 1989 have made it difficult for the Forest Service to sustain an adequate sales program in the face of these rising unit costs.

Finally, and perhaps most frustrating, is the rising number of environmental group appeals. The increase in environmental group appeals has had two significant effects on the timber sale pipeline.

First, and most directly, sales that are appealed cannot be offered for sale by the Agency. Thus, the time spent in preparing these sales does not result in the production of timber for today's market. Upon resolution of the appeal, it is sometimes possible for the timber to ultimately be offered. However, this does little to address the current timber sale pipeline problem.

Second, when the courts render an opinion concerning additional needed environmental analysis requirements applicable to a timber sale, this requirement is usually applied retroactively. This means that any sale in the timber sale preparation pipeline which has not yet been offered is subject to challenge using the recent ruling. Therefore, the Forest Service must go back and do additional work on sales that have already advanced well along in the 7-year timber sale preparation process. This adds delay and increases costs associated with offering sales.

### B. IMPLICATIONS OF THE CURRENT CRISIS

There are three significant implications that flow from the current timber sale pipeline crisis. First and most obviously, there is less volume available during a period of timber scarcity. The already-increasing number of sawmill and plywood plant closures will begin to escalate dramatically as the pipeline continues to dry up.

Second, and equally obvious, Federal, State, and county governments are being deprived of revenues because they are unable to sell timber into markets that are offering premium prices. This means that county school and road systems will suffer. Additionally the Federal deficit reduction initiative is hampered as we become unable to produce a reasonable amount of timber during a period of high stumpage prices and timber scarcity.

Third and perhaps less obvious, the pipeline problem exacerbates current environmental conflicts over individual timber sales and national forest management. When the pipeline is full and a timber sale is appealed, the Forest Service has the luxury of putting that sale aside, expediting work on another, and providing it as a substitute until the conflict over the initial sale can be resolved. When the timber sale pipeline is dry and the Agency is living from hand to mouth in terms of sale preparation work, this opportunity does not exist. Therefore, every timber sale appeal becomes a crisis situation because every appeal means that much less timber will make its way to market.

It is imperative that Congress act this year to begin to replenish the timber sale pipeline. The Agency is in dire need of advanced sale preparation money in order to bring the timber sale program back to a point of stability. Absent this stability it will be difficult to make sound economic and environmental decisions. Congress should provide the Agency with a minimum of $75 million perhaps spread over a 3-year period—to do the advanced sale preparation work necessary to catch up.

Congress should also consider a provision to clarify that timber sales that have progressed beyond a certain point in the timber sale preparation pipeline should not have new requirements for environmental review and analysis retroactively applied by judicial fiat.

## IV. NATIONAL FOREST PLAN IMPLEMENTATION: REALITY OR ILLUSION

### A. THE FOREST PLANNING PROCESS HAS BEEN A MUCH MORE TIME CONSUMING, EXHAUSTING, AND PERHAPS LESS CONCLUSIVE PROCESS THAN ANTICIPATED

With the passage of the 1976 National Forest Management Act (NFMA) Congress directed the Forest Service to develop comprehensive land and resource management plans for each unit of the National Forest System. These plans were to govern management of the national forests to achieve: (1) compliance with the standards included in the legislation; and (2) certain environmental and natural resource goals and resource production outputs. NFMA directed the Forest Service to complete, to the extent possible, the national forests plans by September 1986.

National forest planning, or the process to develop these plans, has absorbed a substantial amount of Forest Service time and effort over the ensuing 12 years. Additionally, the Agency has spent well in excess of a $100 million to develop these plans. More broadly, the plans have involved considerable public participation in, and generated enormous controversy over, the management of the National Forest System.

While the September 1986 deadline was not met for all plans, at present the Agency has completed action on 96 of the 123 national forest plans with all appeals resolved on 44 of these. The Agency is still completing final plans for 27 national forest units with the completion of a final plan—if not the resolution of all appeals and litigation—projected by early 1990.

Contrary to the anticipated outcome when the 1976 Act was passed, the development of national forest plans has probably increased (rather than decreased) conflict over Forest Service land management decisions. For example, the number of administrative appeals on forest plans has been extraordinary, numbering 818 to date. This has been a major reason for the slow progress in finalizing the forest plans in several areas of the country.

Perhaps more importantly, however, the conflict over the development of forest plans has spilled into controversy over day-to-day Forest Service management activities. These sorts of conflicts did not, by-and-large, occur with such intensity prior to the outset of the national forest planning exercise. For instance, administrative appeals of Forest Service timber sales have, as indicated, increased over 700 percent during the course of the last 6 years, or during the most intensive period of forest plan development.

Consequently, the forest planning process has become a much more exhaustive and exhausting task than originally anticipated. Considerable Agency, congressional, and interest group time and effort have gone into debating the issues associated with the management of the National Forest System. To the extent that there has been any consensus reached on the management of the national forests, this is articulated in the final forest plans to be implemented during the course of the next decade.

Given this history, it is now appropriate to ask whether: (1) the forest plans can, in fact, be implemented in the fashion indicated during their development; and (2) the output levels from the national forests provided in the plans will be achieved. Unfortunately, the answer to both of these questions is extremely problematic at the present time.

### B. RECENT FOREST SERVICE DECISIONS ON ADMINISTRATIVE APPEALS OF COMPLETED FOREST PLANS CAST CONSIDERABLE DOUBT ON WHETHER THE PLANS CAN BE IMPLEMENTED IN A SITE-SPECIFIC FASHION, AND THE PROMISED OUTPUTS ACHIEVED

As indicated, the conflict and number of appeals over forest plans have escalated the public debate over the management of the National Forest System. Unfortunately, even when forest plan appeals are resolved (presumably to all parties' satisfaction) the debate never ends. In many cases, either during the pendency or at the conclusion of a forest plan appeal, the participants to the appeal merely continue the debate as they appeal proposed activities to be conducted subsequent to the plan. Generally, such appeals raise many or all of the same issues that were raised in the initial plan appeal. As a consequence, appeals over individual timber sales or other site-specific projects have escalated dramatically.

The net effect of this action is that timber sale appeals often result in a rehash of the arguments that were clearly at issue and should have been addressed and resolved in the preceding appeals over the forest plans. This creates an incredible appeals workload that the Agency is so far incapable of handling. It also generates considerable additional ill will among the various groups interested in national forest management.

A second and related problem is the question of whether the environmental analysis accompanying the forest plans is sufficient to allow the Agency to conduct on-the-ground, land management activities without undertaking subsequent, additional environmental analyses of the same breadth and scope. Simply stated, the answer to this question will define the success of the forest planning process.

The first indication that the programmatic Environmental Impact Statements (EIS's) accompanying the forest plans would not provide the basis for supporting site-specific decisions came with an August 15, 1988 decision by the Chief of the Forest Service on the appeal of the Idaho Panhandle National Forest plan. Environmental groups in this appeal claimed that the plan, and its accompanying EIS, failed to analyze the site-specific effects of the implementation of the plan in roadless areas scheduled for multiple use management. The Chief's decision appears to agree with this assessment and characterizes the forestwide plan and accompanying EIS as programmatic documents with management prescriptions that allow—but do not mandate or necessarily support—future management decisions.

The course currently set by this response is one of developing additional EIS's in a much wider variety of situations. This will easily and quickly outstrip the Agency's ability to achieve forest plan goals.

As a consequence of these related problems, implementation of forest plans is, at present, a very problematical proposition. It is not presently conceivable that the Agency will actually be able to implement forest plans and achieve the output levels and resource management goals indicated therein.

The situation with regard to forest plan implementation is rapidly moving to the critical point. In our view, the Forest Service may need congressional assistance in defining the scope of appeals of activities conducted subsequent to approve final forest plans with all appeals resolved. Moreover, the Agency needs to hear congressional insistence that forest plan goals will be achieved.

Subsequent appeals on individual activities should be limited to the question of whether the activities are conducted in accordance with the final forest plan. Put differently, a final forest plan in which all parties have had a chance to represent their interests should be the subsequent standard of review by which we judge Agency practice.

## V. THE NORTHERN SPOTTED OWL: THE VANGUARD IN THE FEDERAL LAND ALLOCATION DEBATE

### A. BACKGROUND

Newspapers and television news have been filled lately with coverage concerning a bird called the northern spotted owl. Ten years ago, few people had heard of this bird. Researchers at the time proclaimed that only a few hundred were in existence, and their long-term viability as a species was questionable.

Most of the research on the owl has been done within the last 5 years. Federal agencies, universities, privately funded research organizations, and industry have all conducted studies to determine population size and trends, habitat preferences and needs, and compatibility with land management practices. One of the interesting outcomes of this research is that the estimated number of spotted owls has increased from a few hundred 10 years ago to almost 5,000 today. On Bureau of Land Management (BLM) lands, for instance, the number of owls actually found increased from 204 in 1985 to 488 in 1988. Since 1985, the BLM has banded a total of 825 owls. To date, Federal land off limit to timber harvest (e.g., wilderness areas, national parks) have not been fully inventoried. Neither have State or private lands. This represents million of acres of potentially suitable habitat. There is no doubt that total population size estimates will increase after this land is inventoried.

The amount and type of habitat thought necessary to support a viable pair of owls have also changed over the years. Once thought to live and thrive only in large unbroken tracts of old-growth trees, viable pairs have been found in smaller tracts of fragmented old growth or second-growth stands where a few large old trees were left in areas after they had been harvested or burned. The Forest Service once thought it had only 1 million acres of suitable habitat. Now the Agency believes it has more than 4 million acres.

The spotted owl does not rely on "old growth" per se, but on a particular vegetative structure usually found in old-growth stands. This structure includes a multilayered canopy that consists of a few large trees overhead and a second layer of younger trees. Such a canopy is needed to protect the spotted owl from its main predators, such as the larger great horned owl. A forest floor of dead and decaying logs also is needed to provide hiding cover for the owl's preferred food supply, small rodents.

The timber industry supports efforts that ensure the continued existence of all species of plants and wildlife. For example, industry research is currently underway to determine which forest management practices can be used to actually "create" spotted owl habitat. To date, the industry has spent nearly $1 million funding research projects that study the spotted owl, and will continue to support these efforts.

No one knows if the owl is in danger of becoming extinct. There has been only one scientific article written that even hypothesizes the owl is endangered. However, this article—published in the West German publication "Oecologia" by Dr. Russell Lande—documents the results of a theoretical model created to simulate the population dynamics of a hypothetical population of spotted owls. Even the recent Fish and Wildlife Service proposal to list the owl as a threatened species under the provisions of the Endangered Species Act of 1973 confirms that the bird is not in immediate danger.

To the contrary, available information supports the hypothesis that the spotted owl population has remained fairly constant in the last 50 years. This is a very important point. The spotted owl population has not drastically declined in the last 50 years even though old-growth stands have been harvested for at least that long. The Fish and Wildlife Service proposal to list the bird, for instance, did not recognize the specific protection measures already in place on U.S. Forest Service lands to preserve the owl's habitat.

The Forest Service estimates there are currently 6,069,720 acres of suitable owl habitat, many of which will never be harvested. If timber harvesting is allowed to resume at the most recent rate, 5,200,000 acres will be left in 10 years. Some scientists believe some of this habitat will not be usable due to fragmentation but no one knows the true extent of this problem. During the next 10 years, owl inventories and research could be completed and forest management plans developed to protect the owl and related wildlife while assuring the economic and social benefits of the managed forest.

We have plenty of time, abundant habitat, and sufficiently large and stable owl populations to permit informed, rational decisions about protecting the owl without endangering the Northwest's economy or the spotted owl.

### B. THE CURRENT LITIGATION CRISIS

Notwithstanding the flexibility provided by the amount of available owl habitat the BLM and Forest Service together currently have 3 billion board feet of timber under injunction in Oregon and Washington as a consequence of two lawsuits over the agencies' programs to protect the owl. This represents 60 percent of annual Federal sales program and will have significant and serious economic impacts in the near term. There is a strong potential for the loss of as many as 60,000 timber industry jobs as a consequence of this activity as the impact of the injunctions are felt on mills unable to obtain raw material to convert into finished products.

Should the Fish and Wildlife Service proposal to list the owl impact on existing Federal timber that has already been sold and is under contract, or Federal timber sales in California, the impact of the spotted owl controversy will expand greatly. In a worse case scenario, as much as 9.2 billion board feet of timber could be enjoined. This volume greatly exceeds the entire annual sale program from all Federal lands in the region and is almost equal to the Forest Service nationwide sale program. In the three States affected, up to 250,000 jobs could be lost, together with up to $5.6 billion in wages—dwarfing the economic impact of any previous decision made under the 1973 Act.

In that event, half of the public land acreage now available to support timber sale programs in Oregon and Washington would be lost to timber production, creating a severe timber supply shortage, mill closures, and job losses.

### C. NEEDED CONGRESSIONAL ACTION

The Endangered Species Act does provide opportunities during the course of critical habitat designation, and the Cabinet Committee review processes to weigh this level of economic impact on a region's economy against the needs of a species. This is a process which requires a balanced review and takes 2 or 3 years to complete.

However, the impacts on the local and regional economies in the Pacific Northwest as a result of the current court injunctions will decimate the forest products industry and its dependent communities by year's end. Congress must act now to effect an interim or temporary solution to provide timber to the market as we go forward with the process of: (1) determining whether the spotted owl is in fact threatened; (2) if so, deciding what protection measures are necessary; and (3) balancing these measures against the needs of local communities and the region's most important industry.

## VI. The Red-Cockaded Woodpecker: the Preferred Surrogate in the South

### A. BACKGROUND

The red-cockaded woodpecker lives primarily in the southern pine forests with nesting cavities in live, older pine trees. It is nonmigratory and individual families or clans maintain year-round territories around their nesting cavity trees. The cavity trees tend to be clustered in small groups that are termed colonies or colony sites. Individual colonies may have from 1 to 30 cavity trees, which can be either active or inactive.

In 1970, the red-cockaded woodpecker (RCW) was placed on the Federal list of endangered species, under the Endangered Species Act of 1973. Section 7 of the Act prohibits any Federal action which would adversely affect an endangered species or its "critical habitat." All Federal agencies are bound to strict compliance with the requirements of section 7 and must consult with the U.S. Fish and Wildlife Service if there is any question concerning the impact of agency actions or programs on an endangered species or its critical habitat.

The Forest Service presently operates under a RCW handbook and recovery plan—developed in consultation with the Fish and Wildlife Service—which outlines protective measures for RCW populations on National Forest lands in the Southeast. The RCW handbook is incorporated in the Forest Service's existing national forest plans.

Moreover, the handbook sets the baseline for management of colony sites found on private lands. This is because section 9 of the Act prohibits anyone from "taking" an endangered species. The courts have defined "taking" as including any inadvertent action that would adversely affect a listed species or its critical habitat. Therefore, if a private landowner elects to adopt management practices which do not correspond with the RCW handbook, the landowner could be vulnerable to legal challenges of "taking" the RCW under the provisions of section 9 of the Act.

### B. CURRENT LITIGATION ON THE TEXAS NATIONAL FORESTS WILL SUBSTANTIALLY UNDERMINE THE MULTIPLE USE MANAGEMENT OF THE NATIONAL FORESTS IN THE SOUTHEAST

Last year, the Wilderness Society, Sierra Club, and the Texas Committee on Natural Resources filed a lawsuit in the U.S. District Court for the Eastern District of Texas against implementation of the final national forest plan for the Texas National Forests. Plaintiffs alleged, among other things, violations of the Endangered Species Act. The plaintiffs sought injunctive relief to restrain certain timber management activities of the Forest Service, alleging that these management practices had an adverse impact on the RCW.

On June 17, 1988, the court concluded that the Forest Service had violated sections 7 and 9 of the Act by "jeopardizing" RCW habitat and by actually "taking" the RCW. The court issued a permanent injunction prohibiting the Forest Service from practicing even-aged management within 1,100 acres of any RCW colony site.

The Department of Justice has filed an appeal of the District Court decision to the U.S. Court of Appeals for the Fifth Circuit. The case has been briefed and will likely be argued this summer.

### C. MANAGEMENT ON THE REMAINDER OF SOUTHERN NATIONAL FORESTS IS THREATENED BY A MORE RECENT AND BROADER SIERRA CLUB ACTION

On December 8, 1988, the Sierra Club Legal Defense Fund notified the Forest Service of its intent to file suit on 14 other national forests in the Southeast, alleging similar violations of the Act. The Sierra Club action leans heavily on the Texas ruling even though the circumstances are somewhat different on each listed national forest.

Notwithstanding the facts that these national forests are being managed under the provisions of approved national forest plans, the Sierra Club alleges that most of the RCW populations on these forests are declining due to Forest Service "inadequate management practices for protecting" the RCW. In attempting to justify this unprecedented action, the Sierra Club further alleges that "National Forest managers often are evaluated on the basis of timber quotas, rather than on conservation programs."

In response to this threat, the Forest Service is presently evaluating a number of options to see whether additional litigation can be avoided. On March 27, 1989, the Forest Service sent to its affected Forest Supervisors, a policy memorandum which would have unilaterally modified existing and proposed timber sale contracts in the vicinity of RCW colonies. The Forest Service estimated that this action could reduce the timber harvest in the Southeast (Forest Service region 8) by about 26 MMBF this year, with on outyear impact of 56 MMBF in FY 1990, and 25 MMBF annually thereafter on approximately 1.5 million acres. The intent of this action, according to the Forest Service, was to put the Agency in the best defensible position for the expected litigation.

The Region 8 Forest Service Timber Purchasers Council—an affiliation of timber purchasers throughout the Southeast—expressed grave concerns with the potential impact of this proposed Forest Service action undertaken outside of the framework of the national forest planning process and without public participation or National Environmental Policy Act compliance. The Council objected to some other, longer term initiatives that the Agency is considering in response to the Sierra Club threat. Consequently, on March 31, the Region 8 Forest Service Timber Purchasers Council filed an appeal to the Chief of the Forest Service, challenging the March 27 Regional Forester's decision to unilaterally implement a new policy on timber cutting within three-fourths of a mile of red-cockaded woodpecker colonies on 14 national forests in region 8.

On April 11, the Chief responded to this appeal, stating that the March 27 decision was not yet appealable because the Regional Forester had not conducted the appropriate environmental analysis along with the decision. The Chief directed the Regional Forester to perform an environmental analysis, and then prepare the appropriated decision document. The Regional Forester is now evaluating options for further action still mindful of the threat of litigation from the Sierra Club. For its part, the Sierra Club, has so far flatly refused to meet with the industry and the Forest Service to discuss the opportunity possibility of compromise.

## VII. THE SALVAGE OF FIRE DAMAGED TREES—A FRUSTRATING ENVIRONMENTAL CONTROVERSY AND A WASTE OF FOREST RESOURCES

### A. BACKGROUND

Presently the Forest Service is attempting to salvage a large volume of fire-damaged timber as a consequence of the fire conditions the Agency experienced during the summers of 1987 and 1988. The summer of 1987 fires received considerable coverage because they occurred in both populated areas and, in California on lands with high timber values. During that summer a large amount of acreage in southern Oregon also burned as volatile fire conditions persisted well into September.

The summer of 1988 became an even more highly publicized fire year with the Yellowstone fire which burned through a good part of the summer in Yellowstone National Park. While the fire in Yellowstone National Park was the most highly publicized fire of last summer, a substantial amount of Forest Service acreage with significant timber values also burned in Oregon, Montana, and Idaho during the season.

The net result of both summers is that the Forest Service still faces a substantial task to rehabilitate areas that were burned, and to salvage damaged and dying timber. As an example, over 1 million acres of blackened timber were left in wake of the 1987 wildfires. The Agency estimated that there was more than 1.8 billion board feet of usable wood in the burned areas. It is widely accepted that salvage of burned timber is both economically desirable as well as environmentally preferable. By removing large quantities of dead timber from the forest floor, salvage operations prevent potentially explosive buildup of fuels that may, in later years, lead to other harmful wildfires.

Notwithstanding these benefits, the salvage of fire-damaged timber from the fires of both 1987 and 1988 has become extremely controversial among preservation groups that object to timber harvest and road construction.

### B. APPEALS AND LITIGATION HAVE FOLLOWED THE FIRES IN ALMOST EVERY CASE

Much of the controversy associated with the fire salvage effort is a function of fires that burned in roadless areas released by 1984 wilderness bills in Oregon and California. Generally speaking, the environmental community has taken the position that salvaging dead trees and rehabilitating fire-damaged ecosystems is not environmentally desirable. Environmental groups would apparently prefer to leave these areas roadless, notwithstanding the negative environmental impacts associated with letting unreclaimed lands erode because of a lack of reforestation.

Consequently, the salvage efforts initiated by the Forest Service in Oregon and California (and to a lesser extent in the other States) have spawned a large number of appeals, at least three major lawsuits to date, and specific congressional action designed to allow the Forest Service to salvage a controversial area by precluding judicial review.

For its part, the Forest Service has done everything administratively possible in an attempt to expedite the salvage effort. The Agency has streamlined its own timber sale preparation environmental review procedures. Moreover, the Agency has streamlined its administrative appeals process in an attempt to hear—and resolve where possible—appeals in a timeframe attuned to the need to salvage a rapidly deteriorating resource before it becomes economically worthless and additional environmental damage is done.

Notwithstanding these efforts, the Agency currently has 570 MMBF of fire-damaged timber enjoined or stayed by administrative or court order. In each case, it is unlikely that the timber will be salvaged within the timeframe necessary to recover the value of the timber or reasonably initiate environmental enhancement measures associated with the rehabilitation of burned areas.

### C. NEEDED CONGRESSIONAL ACTION

Quite simply, the Forest Service has done as much as it can to address this situation. Congress now needs to deal with the need to salvage burned areas and rehabilitate soils and watersheds that have suffered fire damage.

The current administrative and judicial processes available to individuals or groups who wish to obstruct this activity make it impossible for salvage or rehabilitation to occur. Congress must address these procedures in the light of the fact that the Forest Service has become increasingly frustrated in its attempt to discharge land stewardship responsibilities associated with rehabilitating burned areas. Absent congressional action, the Forest Service cannot be reasonably expected to rehabilitate areas where controversy over access or reforestation occur. Given that fires generally burn more extensively in roadless areas because of a lack of access for firefighting in the first place, this conflict is likely to continue to increase as long as dry weather persists throughout the Western United States.

## VIII. CONCLUSION

The above picture is not particularly optimistic from the standpoint of the localities dependent on Forest Service timber. Nor, in our view, is this an optimistic set of circumstances from the standpoint of the world's forest resource.

The market for wood products in which we currently operate—whether we are talking about the market for solid wood products or pulp fiber—is a world market. In this market we compete with other developed and developing countries. To the extent that we reduce our production, the demand for wood products will be met by other countries.

As a country, our forest lands are blessed by fertile, temperate zone soils. They are capable of being managed on a sustained basis using a body of knowledge that far exceeds mankind's understanding of soils in other parts of the world—for example, in the forested tropics.

The United States also has the most advanced silvicultural systems and forest science in the world today. Simply stated, in part as the result of visionary research programs fostered by Congress, we are the acknowledged world experts in forestry.

Third, we have the most sensitive environmental control limitations in the world. Regarding the national forests in particular, they are managed under the most restrictive environmental and resource control requirements found anywhere in the world.

The national forests contain half of the country's supply of wood that is used for construction purposes. However, the amount harvested from the national forests is only 15 percent of what Americans use annually. I view this as a contemporary, global tragedy in a world so starved for fiber that large areas of the tropics are deforested daily.

Yet, you will hear requests today and have heard requests at previous hearings for the harvest levels on the national forests to be reduced by 50 percent. The next time that you hear that request, you should be aware that the timber volume involved equates to the annual wood production of the Amazon Basin.

As you review this issue today, I would urge you to be sensitive to the economic situation presented by the communities dependent upon national forest timber. But more broadly, I would ask you to understand that we have a responsibility to look at this as a global issue and to assess our proper role in a global solution.

In my view, we have a responsibility to produce wood fiber to our potential because we can do so in a way that minimizes the environmental implications of this action. The balance of the world simply lacks this capability. The wood we choose not to produce will be replaced in the world fiber economy by wood from Borneo, Malaysia, Chile, the U.S.S.R., and Brazil. Our reluctance to perform to our potential will have grave implications for our ability to convince the developing world that their forests should be conserved.

I appreciate the opportunity to testify and would be happy to respond to any questions.

## PREPARED STATEMENT OF ROBERT RUMPF, VICE PRESIDENT AND GENERAL MANAGER, THE GLATFELTER PULP WOOD CO., SPRING GROVE, PA

Good afternoon. It is a pleasure to be here today to testify on the status of both private and public forest lands in the United States, as well as the present and future supply of all forest resources. I am vice president and general manager of Glatfelter Pulp Wood Company. I am here today representing both my company and the American Forest Council.

The American Forest Council is jointly sponsored by the American Paper Institute and the National Forest Products Association. Together these associations represent more than 2,500 companies throughout the United States engaged in growing and harvesting timber as well as the manufacture and distribution of forest products. The American Forest Council is responsible for representing the private forest management interests of the forest products industry.

The Glatfelter Paper Company operates in Pennsylvania, Maryland, Delaware, and Virginia. We directly employ approximately 3,400 people at our pulp and paper plants. We own approximately 107,000 acres of forest land. A very small percentage of the wood fiber used to run our plants is derived from our ownership. Glatfelter depends very heavily on wood fiber grown on nonindustrial private forest lands.

### I. THE GOVERNMENT, PUBLIC FOREST LANDS, AND BOTH INDUSTRIAL AND NONINDUSTRIAL PRIVATE FOREST LANDS ALL HAVE INTERDEPENDENT ROLES IN SUPPLYING THE FUTURE DEMAND FOR FOREST RESOURCES

The United States currently faces an immediate timber supply crisis. This crisis clearly is not for lack of natural resources but rather induced by national and regional policy disputes leading to the withdrawal of productive forest lands.

Recent predictions made by the U.S. Forest Service in the 1989 RPA Assessment clearly show a substantial increase in demand for all resources derived from the forest over the next 50 years. During this period demand for timber is expected to increase by 50 percent. Demand for all forms of developed recreation on forest lands show a similar increase. Supplying this demand in an environmentally sound manner is possible and essential.

The government, public forest lands, and both industrial and nonindustrial private forest lands have interdependent roles in meeting this demand. Government policies, regulations and laws should be conducive to timber management, as environmentally sound timber management is compatible with—or can enhance—those noncommodity forest resources which are in public demand.

Those involved in planning for future demand should be cautious not to broadly categorize forest land ownership classes for the supply of certain forest resources. Individual landowner objectives, regional and local variations in demand, specific environmental concerns, and economics, together with many other variables, emphasize the need for a dynamic approach to planning.

### II. THE UNITED STATES CLEARLY HAS THE ABILITY TO SUBSTANTIALLY INCREASE ITS PRODUCTION OF BOTH COMMODITY AND NONCOMMODITY FOREST RESOURCES

According to the 1989 RPA Assessment the United States currently grows 31 percent more timber than is harvested, burned, destroyed by insects, or otherwise consumed each year on the "harvestable" forest lands. This figure is conservative as the draft RPA Assessment significantly underestimates growth on industrial forest lands, particularly in the South. Add to this a potential 17 percent increase in timber growth nationally if all nonindustrial private forest land owners would implement financially viable improved forestry techniques. Finally, add in the full productive potential of public lands. Our forest lands clearly have the potential to meet the public's increasing demand for wood products.

### III. PROPER TIMBER MANAGEMENT CAN MAINTAIN OR ENHANCE OTHER FOREST RESOURCES

The American Tree Farm System is testimony as to how proper timber management can maintain or enhance other forest resources. A Tree Farm is a privately owned forest, managed to produce continuous crops of trees with the additional benefits of improved wildlife habitat, watershed protection, outdoor recreation, and aesthetic values. There are nearly 61,000 Tree Farmers who manage 89 million acres of woodlands for pride, profit, and pleasure. A full 95 percent of Tree Farm owners are nonindustrial. As you are probably aware Mr. Chairman, the State of Georgia ranks number one in the Nation in Tree Farm acreage. Tree Farms are living, working examples of applied forestry and the benefits of multiple use.

The forest products industry has an excellent record of providing recreational opportunities, supporting environmental causes, and protecting special habitats. For example:

- In California there are more than a million acres of forest industry land open to the public for hiking, fishing, hunting, and other forms of recreation. There is an increasing need for liability protection to continue to allow, and further encourage the recreational use of private land.
- Great Northern Nekoosa Corporation has established a comprehensive recreation management program for their lands containing the West Branch of the Penobscot River in Maine. Great Northern's objective is to provide public access to this superb white-water rafting river while protecting and enhancing both the rafters recreation experience and the multitude of additional values associated with the river.
- Anderson-Tully Company, one of the Nation's leading producers of hardwood lumber, is also one of the industry's most progressive wildlife managers. Anderson-Tully has developed corporate, full-service hunting facilities as well as the most advanced trophy deer management programs outside of Texas. The company received the Mississippi Wildlife Federation's Conservationist of the Year Award in 1987.

Unfortunately the private forest land owner's stewardship and multiple use record is relatively unknown or distorted. Preservation groups perpetuate and the 1989 RPA Assessment inadvertently advances public misconceptions regarding the conservation record of private forest land owners. The Assessment predicts an increasing demand for recreation and timber which could lead to conflicts with wildlife and cultural resources.

Preservation groups and the Assessment document lead the public to believe that many forms of recreation, critical wildlife habitats, and cultural resources are only protected or enhanced on public lands. In addition, the Assessment illustrates how, in theory, the future increased demand for timber products can be supplied from private forest lands. This promotes the public attitude that National Forests and other public lands should be allocated more for recreation, wildlife, and cultural resources and less for the full assortment of multiple uses.

Mr. Chairman, forest lands should not be broadly categorized for the supply of specific resources. Private forest land owners have clearly demonstrated their ability to produce noncommodity resources while meeting their commodity resource objectives. The ability to increase the production and protection of all forest resources in the future is largely a function of the economic feasibility of practicing sound forest management.

## IV. OUR ABILITY OR INABILITY TO ACHIEVE HIGHER LEVELS OF FOREST PRODUCTION WILL HAVE A DIRECT IMPACT ON OUR NATIONAL ECONOMY, OUR INTERNATIONAL COMPETITIVENESS, AND THE HEALTH OF THE GLOBAL ENVIRONMENT

The forest lands of the United States sustains one of the Nation's oldest, largest, and most competitive industries.

The forest products industry today employs more than 1.4 million men and women in all 50 States and each year ships products valued at approximately $190 billion.

The forest products industry is comprised of several diverse but interdependent sectors. It consists of large manufacturing plants, small family owned sawmills, and 4.5 million individual woodlot owners who furnish companies with much of the commercial-quality timber used in the manufacturing process. Timber supplied from public lands is important to the industry in all regions of the country.

Timber is the number one valued crop produced in the United States. In terms of the national economy, over 6 percent of the gross national product is derived from the forest products industry. Timber is the highest-valued crop in the South, the Pacific Northwest, and Alaska. The value of timber in the South is more than three times that of soy beans, the second-highest valued crop. Timber is of course number one in Georgia.

In spite of this record, funding for forestry research significantly lags behind agriculture. Programs such as the McIntire-Stennis Forestry Research Act and the Competitive Forestry Research Grants need additional support.

The forest products industry enjoys important competitive advantages that *can* serve it well into the year 2000 and beyond. First, this Nation's forest lands constitute a vast renewable resource that has helped to make the U.S. forest products industry among the most competitive basic industries in the world. In addition, forest land owners and manager's have demonstrated their commitment to environmentally sound forest management, for example, on the average over 2.5 million seedlings are planted daily. Replanting, reseeding, and modern forestry techniques which promote natural reforestation have helped to maintain the U.S. forest land base.

The ability to maintain our high levels of forest resource production will have a direct effect on our national economy and international competitiveness. Perhaps more important is the impact the United States will have on the global environment by our ability or inability to achieve higher levels of forest resource production. The United States has the most environmentally sound forest management practices in the world. We can have a positive effect on the global environment by increasing our share of the supply of forest products to the world.

### V. THE POLICIES, PROGRAMS, REGULATORY SYSTEM, LAWS, AND TAX STRUCTURE OF THE UNITED STATES SHOULD BE CONDUCIVE TO FOREST MANAGEMENT

There is no doubt that the demand for forest resources will increase dramatically over the next several decades. Moreover, it is clear that the forest lands of the United States are capable of supplying this increasing demand in an environmentally sound manner. Any regional or national shortages of timber and other forest values are the result of politically driven land allocation controversies. To ensure our future productive capacity the policies, programs, regulatory system, laws, and tax structure of the United States should be conducive to maintaining a productive and unencumbered forest land base. Some of the major issues influencing the productive capacity of our forest lands today, along with possible resolutions include:

- *Wetlands Protection.*—Any proposed policies should be consistent with the recommendations of the National Wetlands Policy Forum Final Report. The Forum stated that good silvicultural management is compatible with wetlands protection and that its regulatory exemption should be maintained.
- *Capital Gains.*—A substantial capital gains tax rate differential is essential for long-term timber growing investments, and is critical to attracting sufficient capital to ensure long-term supply.
- *Research.*—Without an increased public commitment to funding forestry research such as the Forest Service Research Program, the McIntire-Stennis Forestry Research Act and the Competitive Forestry Research Grants Program we risk jeopardizing the future of our industry.
- *Technology Transfer/Education.*—Research, at any funding level, is ineffective unless the results are implemented. Programs such as the Forest Service State and Private Forestry must be adequately funded to transfer new technologies to forest land owners. Creative public education programs such as the nationally recognized Project Learning Tree should be supported to allow our urban dwellers to understand the benefits of sound forest management.
- *National Forest Plan Implementation.*—The Forest Service needs congressional assistance in defining the scope of appeals of activities conducted subsequent to approved final plans. Moreover, the Agency needs to hear congressional insistence that forest plan goals will be achieved.
- *The Public Timber Sale Pipeline.*—It is imperative that Congress act this year to replenish the Forest Service timber sale pipeline.

The Agency is in dire need of advanced sale preparation money in order to bring the program back to a point of stability.

- *The Red-Cockaded Woodpecker.*—It is becoming increasingly likely that congressional intervention will be necessary to assure that issues addressed and resolved by national forest plans are not continually debated by groups that had a fair opportunity to raise their concerns as plans were developed.
- *The Northern Spotted Owl.*—The impacts of Court and agency actions on the local and regional economies in the Pacific Northwest will decimate the forest products industry and its dependent communities by year's end. Congress must act now to effect a temporary or interim solution.

Mr. Chairman, the public, industrial, and nonindustrial forest lands together have the potential to satisfy the future demand for forest resources in an environmentally sound manner. We appreciate your interest and efforts to help us reach that potential. I would be glad to respond to any questions.

**[The prepared material of Mr. Ziegler, "Something for Nothing" and magazine article submitted for the record follow:]**

# SOMETHING FOR NOTHING

## Debt Write-offs for Sustainable Global Development

K.A. Ziegler
Nairobi, Kenya
30 January, 1989

## Introduction

You cannot squeeze blood from a stone. Some banks find this difficult to accept when dealing with Third World debt.

It is becoming quite clear that a large volume of Third World debt will never be repayable. Individual loans may of course be repaid, but only by fresh borrowing elsewhere. That would not be so worrying if the debtors could at least pay interest.

Nobody expects the corporate and governmental borrowing entities in developed countries to wipe out their aggregate debts. In fact, those debts should and do grow, as their economies grow. However, the borrowers have to pay timely debt service on their aggregate debts.

By extension, one would not expect Third World countries to pay off their aggregate debt, but simply their debt service costs. Unfortunately, many cannot.

Certainly, the situation is different, region by region and country by country. In each region there are relatively stronger and/or more prudently managed economies. Furthermore, in Latin America, the commercial bank component of total debt is typically greater than that of many African countries.

Extended payment terms, capitalising a portion of interest costs, or limiting annual interest to a fixed percentage of export earnings all are useful exercises.

However, for many economies, these are merely short-term palliatives in an ever worsening situation. For many of these nations, the very resources needed for sustainable economic growth are being depleted in order to generate foreign exchange for debt servicing.

During the "lending frenzy" of the Seventies, comparable normal minimum ratios which would have been applied to, say, prime corporate "First World" borrowers were not consistently applied to sovereign borrowers. The writing should have been on the wall.

Consequently, multi-national private and government-sponsored financial institutions now increasingly face the reality that Third World Debt servicing costs are unsustainable for many developing countries. Repayment of principal by many of these debtors, whose poverty, population pressures, relative terms of trade, and physical environments deteriorate at an accelerating pace, simply will not happen.

Commercial Bankers increasingly sell off their Third World loan portfolios at substantial discounts off face value, in tacit recognition of this reality, and take whatever tax relief is available on the losses incurred.

The dual tragedy of this practice is that, firstly, Third World debtors continue to be saddled with the burden of indebtedness to the new holder of debt. Secondly, the financial institutions and tax-payers incur losses, without any global benefit arising to a world environment under assault from rich and poor alike.

The list is familiar :

- deforestation
- continued intensive use of fossil fuels
- accelerating population trends
- desertification
- the accelerating release into the world's atmosphere and water resources of harmful chemicals and gases
- the irreversible destruction of plant and animal life with untapped genetic benefit to man.

These are now widely recognised as resulting in a multi-tiered assault on the life-supporting environmental systems of the earth as we know it.

Developed countries continue to be principal environmental polluters and their houses certainly should be put in order. However, this is not the focus of this proposal, nor is it relevant today to ascribe blame to any parties involved.

"Debt for "Equity" swap plans may continue to make sense for some lenders and for some borrowing nations, particularly if new constructive, non-inflationary investment is attracted. However, progress to date has been slow, when viewed against the aggregate burden of debt.

Furthermore, the worthy initiatives in "Debt for Nature" swaps done to date likewise have only had minor impact. Unfortunately, tax considerations make it more desireable for banks to sell debt at a discount first, for a cash realisation immediately, prior to lodging claims for tax relief on the unrealised discounted amount. Naturally, banks will and should pursue whatever strategies serve their shareholders and depositors' interests best.

## Proposal

The proposal is that certain debt servicing costs for specific countries are written off, if the governments concerned are prepared to commit themselves to implement certain specific environmental programmes under continuous donor monitoring and evaluation, and with the necessary technical support. In effect, an indefinite moratorium, eventually resulting in the formal cancellation of the debt instrument. The idea is not to force unpopular programmes on these countries, but to encourage them to carry out programmes which they probably have already formulated themselves and which also benefit the rest of the world.

I propose that the dual problems of Third World Debt and Environmental Degradation be attacked jointly, as they create an immediate opportunity for global co-operation. If pragmatic Heads of State recognise the irreversibility of both of these trends, better mileage can and should be made of the writing off of debt. This would require long-term local cost commitments by debtor nations to sustainable, continuous and demonstrable programmes of environment stabilisation and enhancement. Future costs of reversing environmental degradation are immeasurable and the human costs unacceptable.

## Implementation

Annual debt servicing costs for Third World borrowers should be cancelled by the national governments of the lending institutions and other wealthy First World sponsors, in direct proportion to the demonstrable and continued commitment to environment stabilisation and enhancement programmes.

The costs of this debt service relief should be allocated on a case by case basis and carried both by lending institutions and by tax-payers of the sponsoring nations.

The lending institutions will not lose much beyond what they have already lost, either through sales at a discount, or on outright write-offs. National tax programmes should be altered to provide equitable incentives.

The tax-payers of the nations of current lending institutions, and those of new sponsors, e.g. Japan and others in Developed Countries, will incur some additional costs today. However, by incurring these additional costs now, the costs of eventual global environmental reparation in future will be infinitely less.

The debtor country will incur a heavier local cost expenditure than otherwise, since environmental programmes typically are local cost and labour intensive.

However, the debtor country will "save" a large outflow of foreign exchange on contractual debt service and emerge with a clean record. In other words, doing well by doing good.

They would then be free to incur new debt under disciplines now correctly applied by lenders, which are environmentally sound, and conform to the spirit of genuinely sustainable usefulness articulated in the "Baker Plan".

Ideally, a menu of national programmes should be proposed by each debtor nation. This should be done in conjunction with a multinational supervisory body, assisted by entities such as the IMF, UNEP and the World Bank. These programmes would be tailored to the specific resources of labour, land, food production, reafforestation, and reclamation of waste land available in the debtor nations.

Continuing monitoring of progress should be provided by mutually acceptable scientific organisations, such as the GEMS professionals at UNEP, in conjunction with data available from NASA and/or other private specialist groups accessible for surveillance and objective assessment of progress.

As debtor nations demonstrate their sustained commitment to these programmes, debt principal would be forgiven according to the sponsoring nations' and supervisory agencies' assessment of the attainment of targeted goals.

In Kenya, such programmes could include both the rehabilitation of the degraded lands in the vulnerable Northern Region by large, disciplined groups of presently unemployed young people, and a closer supervision of Game Reserves presently under attack by poachers, farmers, herdsmen and charcoal-makers.

In Amazonia, such programmes could range from re-afforestation to research into the vast verbal knowledge of indigenous Rain Forest people into the treasures of their unique environments.

In all cases, participation by the world's great pharmaceutical, energy and natural resource oriented private companies, should be encouraged to provide new investment and a greater return from these unique resources, both to the host country through royalty or similar arrangements, to the investors and to man's knowledge of the rich genetic diversity available in his environment. Arrangements for rewarding Third World countries could be formulated for the use of newly discovered crop varieties elsewhere by commercial firms.

## Conclusion

I propose that Heads of Government in both the Developed and Developing Nations take the immediate challenge of reconciling these two pressing problem areas on a similar basis to the vital protocol agreed recently regarding CFC control in relation to destruction of the World's ozone layer.

K.A. Ziegler
30 January, 1989

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## PROFESSIONAL BACKGROUND

**ZIEGLER AND ASSOCIATES, LONDON** 1988 - Present

Founding principal of financial consultancy group, active on behalf of individual, governmental and corporate clients in the identification, negotiation and acquisition of both private and public companies internationally.

Commencing summer of 1988, conceived, developed and proposed to relevant financial, corporate and multi-national institutions a structure for debt relief for Third World national borrowers who co-operate in implementing sustainable domestic programs with continuing local benefits and positive global environmental impact, such as re-afforestation, desert and "waste-land" reclamation and environmentally positive industrial and agricultural programs.

Helped individual governments identify longer term environmentally sound projects to qualify for debt relief. Identified multi-national and private specialist groups to assist in project selection and ongoing monitoring.

**INCAVAL GROUP, LONDON** 1985 - 1987

Founding Director of IncaVal (UK) Ltd., London based investment management company and member of FIMBRA. Executive Chairman of IncAdmin NV, which achieved profitability within first year of operations.

Chairman of Board of Supervisory Directors of IncAmerica NV, a US equity oriented investment company. Responsible for establishing investment guidelines and for the appointment of and performance monitoring of investment advisors. Achieved 43% increase in Net Asset Value during first 17 months of operation.

Marketed Group's Services to over 400 eligible institutional and private multinational investors. Selected and appointed initial network of authorised Agents.

**DAVID ALLSOPP & ASSOCIATES, LONDON** 1984 - 1985

Senior Consultant actively marketing two highly attractive venture capital vehicles to a prospective client base which included over 200 significant private and institutional investors throughout the UK, Continental Europe and the Middle East.

**BANKERS TRUST COMPANY, LONDON 1982 - 1984**

Executive Director, Bankers Trust International and Vice President, Bankers Trust Company, 1982 - 84. Recruited into Bankers Trust International Ltd. (BTI) in March 1982 to serve as Executive Director and Senior Business Development Officer to market all merchant banking products in the Middle East and Africa Region.

Obtained major Eurodollar mandate for the Middle East/Africa Group which resulted in 25% of that Group's asset-related fee income for the year 1982. Also structured a successful and innovative strategy for a highly regarded North African borrower, which included a package comprising floating rate dollar debt, a parallel FRN issue, with both linked to a swap transaction into fixed rate dollar debt.

**THE FIRST NATIONAL BANK OF CHICAGO (FNBC) 1968 - 1982**

Recruited after summer work as Case Writer for Harvard Business School subsidiary based in Central America, by Bank, to develop strategies for profitability penetrating key Third World banking opportunities. Worked 14 years at First Chicago in positions of increasing responsibility, with particular focus on developing Bank's prominence in the Sovereign State lending markets.

In 1969 took responsibility for venture capital subsidiary in Nairobi, Kenya to identify, structure and establish profitable ventures for Bank's corporate clients. Appointed sequentially as FNBC's Representative, Branch Manager and Merchant Banking Director. Responsible for early and expanding profitability of FNBC throughout East Africa.

From 1976 to 1980 appointed Merchant Bank Director of Loan Syndications and Head of Government Business for First Chicago Limited, London. Marketed at the most senior governmental levels a variety of capital market alternatives. Selected by Chairman to expand Bank's senior contracts with sovereign governments.

Wrote extensively for leading financial journals on Eurodollar Market activity in Third World countries, with emphasis on lending disciplines and sustainable development.
After 12 years abroad for the Bank, assumed responsibility for FNBC's energy-related business in 11 Western States, based in Los Angeles.

## EDUCATIONAL BACKGROUND

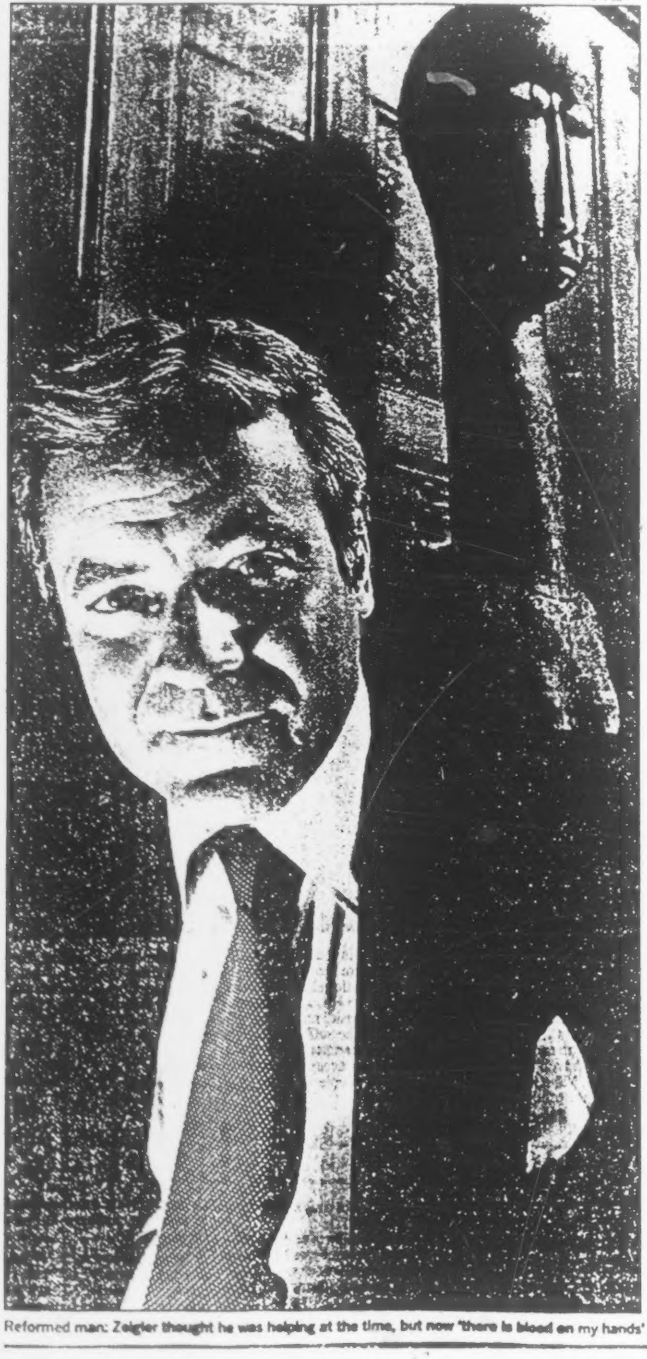
Harvard University - Graduate School of Business Administration
MBA 1968

Freie Universität (Berlin) - Yale Fellowship in Economics
1965 - 66

Yale University - BA 1964 (Honours Programme)
(Andover-Yale Scholarship)

Phillips Academy (Andover) 1958 - 60 (Full Scholarship)

Tony Larkin



Reformed man: Zeigler thought he was helping at the time, but now 'there is blood on my hands'

BRAZIL could be rid of nearly half its external debt of $115 billion within a month if it came forward with a verifiable programme for preserving the Amazon. The cost to taxpayers in the northern hemisphere would be marginally higher in the short term, but it represents a bargain when set against the expense of reversing future environmental damage.

These assertions, now under consideration by the governments of Brazil, America and Britain, are made by Karl Zeigler, a "converted" American banker.

He played a leading role during the "lending frenzy" era of the 1970s in persuading African governments to accept loans they had little prospect of repaying. "There is blood on my hands, although we thought we were helping at the time," he says.

Based in London as a financial consultant, Zeigler, a graduate of Yale and Harvard, was a director of the First National Bank of Chicago, operating in Nairobi, and later vice-president of Bankers Trust. He led syndicates which secured "at least 30 major loans in Latin America and elsewhere".

His proposals to resolve the Third World debt impasse go far beyond the "debt for nature" swaps which have been secured by the Dutch government, Unicef, Conservation International and the Worldwide Fund for Nature.

Seldom exceeding $3m, these have been mostly imposed on countries such as Zambia, Bolivia, Costa Rica, Ecuador and Peru, which have promised to conserve their local environments along lines laid down by the institutions in exchange for having their debts written off. But this kind of "gringo greenmail" has been angrily rejected by Jose Sarney, Brazil's president.

While conceding that some form of donor monitoring would be essential, Zeigler stresses that the Brazilian government must make the first move by presenting its own "menu" of programmes. Sarney recently outlined an ambitious "no-strings" environmental plan.

"He has laid the groundwork for something Brazil might wish to propose, perhaps in conjunction with the Inter-American Development Bank," Zeigler says. "Brazil must be given credit for its environmentally friendly programmes, notably gasohol (a vegetable-based vehicle fuel) and its commitment to hydroelectric power."

Zeigler's thesis, Something For Nothing, rests on the belief that it makes business

# Gringo greenmail puts nature on the balance sheet

● The northern hemisphere could pick up an environmental bargain if governments would get together and set off the huge Brazilian debts against programmes to protect the rainforest. STUART WAVELL reports

**Paying the price: environmental costs, such as burning Brazil's rainforest, are the most punitive**

sense to recognise environmental costs as ultimately the most punitive on the balance sheet unless they are rapidly addressed.

"The Amazon represents a far more valuable resource to Brazil than oil does to Saudi Arabia, because it's renewable," he says. "Brazil would be charging rent, so to speak, because the forest helps to keep the world a cleaner place. The rent would be the servicing of Brazil's debt."

The financial mechanism he advocates is known as the secondary market. It developed after the 1982 Mexico debt scare, when the lending banks closed their doors to the Third World.

A number of smaller players in the lending boom then found that they could buy up Third World debts at a discount. In 1984, it was possible to purchase $1m of debt for $750,000. That 25% discount has now risen, in some cases to 80%.

Brazil's debts are at present sold at a discount of about 67%, and Zeigler proposes that a consortium of lending governments should buy $50 billion of the Brazilian debt for then leave it on the books to discourage Brazil from reneging, while agreeing to meet its servicing costs of $5 billion a year.

That is not the burden it sounds, Zeigler says. Governments already dish out 34% tax repayments on losses incurred in the secondary debt market. And governments and banks may, anyway, have to write off debts running into tens of millions of dollars.

"Right now, the constituency of lending governments has never been better disposed to this kind of presentation," he says. As precedent, he cites the DM850m (£267m) debt written off by the West German government in approval of Kenya's reafforestation and irrigation programmes.

Tropical rain forest
Amazon
BRAZIL
ARGENTINA

Zeigler also advocates continuous monitoring by mutually agreed agencies – such as the UN Environment Programme, which has access to 400 satellites via Nasa. After a number of years, the debt would be formally cancelled.

"My thesis is that there's no way that economic development and food sustenance can be provided to Third World countries if they destroy their resource bases. They are the first to be hurt. But if Brazil keeps the Amazon intact, Brazil will be the major beneficiary."

He is convinced that a solution can only be found at head-of-state level, since he regards commercial bankers as incapable of making the conceptual leap into investment in trees.

"Let us say President Sarney went to Mrs Thatcher and President Bush and said, 'We are bankrupt, but we and the world's to keep the Amazon in place. We will deliver, say, 500m acres of forest intact, and we will spend whatever it costs in local currency to create jobs for that purpose.' "

Local jobs and new industries, created in partnership with chemical and pharmaceutical multinationals, are integral to the second stage of Zeigler's plan. This is the return to Brazil of "flight capital" – loan money corruptly salted away in Swiss banks, as well as family nest-eggs prudently invested abroad to escape the crippling local inflation. It is estimated that Brazil's flight capital amounts to more than half its external debt.

"Even if Brazil had its debt written off tomorrow, while the same mechanisms existed I wouldn't want to lend them another cent," Zeigler argues. "That's where the banks are right now, and flight capital is being exacerbated. It's a downward spiral.

"Parallel to this financial disaster is environmental degradation – what happens when starving people grab whatever twig or branch they can. There is a clear correlation between poverty and the accelerating rates of deforestation, topsoil loss, water scarcity and water impurity."

On the day that newspapers reported the murder of Chico Mendes, the champion of Brazilian rubber tappers, Zeigler read an item which he found equally appalling. It was a report that Brazil's coffee crop in 1988 was expected to fall 35-40% below the previous year's. This was due, according to the ministry of agriculture, to climatic change brought about by clouds of smoke from burning forest.

Zeigler has had a favourable response in America, notably from senators Albert Gore and Timothy Wirth. In Latin America, his blueprint is being considered by Brazil, and has already inspired joint ventures in Ecuador and Peru. He is lobbying the Inter-American Development Bank and the UN, and has sent his paper to British cabinet ministers and Timothy Lankester, Treasury under-secretary with responsibility for debt questions.

The Zeigler plan stretches the limits of banking radicalism. But in another part of the forest, his collaborator, the British ethnobiologist Dr Conrad Gorinsky, has developed an even more ambitious concept which he believes goes to the heart of the Amazon and its people.

*Next week: the Green Bond*